SP01084

SONY®

DIGITAL METER UNIT
DMU-30

MAINTENANCE MANUAL
1st Edition (Revised 2)
Serial No. 10001 and Higher

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturer's instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20V AC range are suitable (See Fig. A)

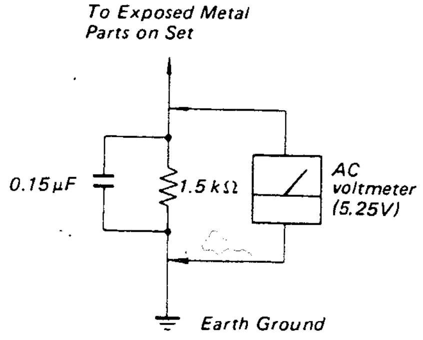

Fig. A. Using an AC voltmeter to check AC leakage.

3775

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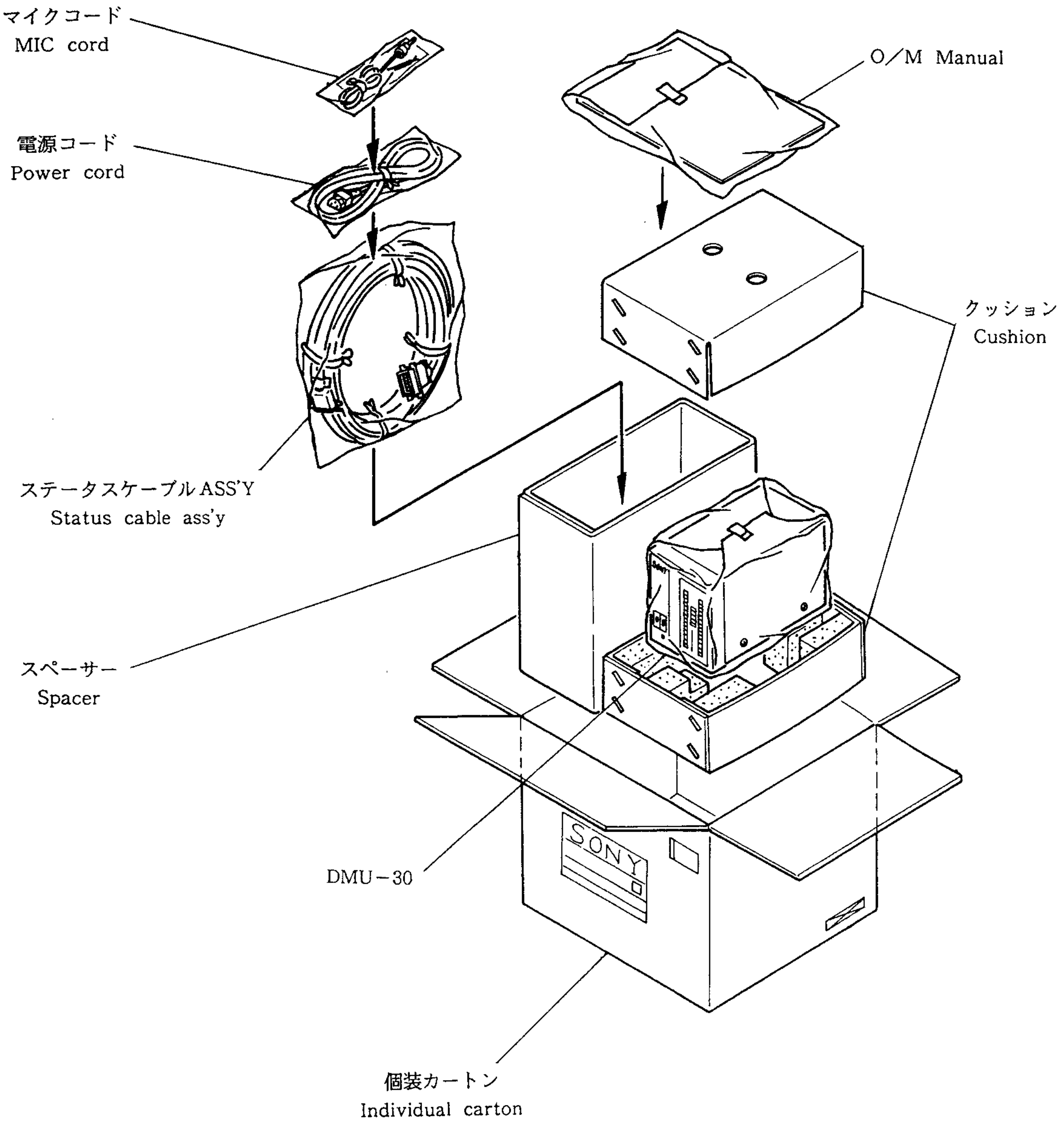
第１章　サービスインフォメーション
SECTION 1 SERVICE INFORMATION

1－1.　再梱包
1－1.　REPACKING



マイクコード
MIC cord
電源コード
Power cord
ステータスケーブルASS'Y
Status cable ass'y
スペーサー
Spacer
O／M Manual
クッション
Cushion
DMU－30
SONY
個装カートン
Individual carton

1−2. ラックマウント

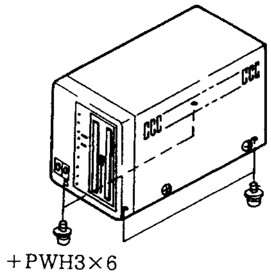
DMU-30は専用のラックマウントアダプターを用意しておりませんが、足を外すと高さがEIAJ規格の19インチラックサイズで3Uの高さに設計されています。

幅は105mmに設計されているため19インチラックにちょうど4台入ります。

1−2. RACK-MOUNTING

Although specially made rack-mounting adaptors are not provided for the DMU-30, its height is designed to be equivalent to 3U so that, once the unit's feet have been removed, it can be accommodated in EIAJ standard 19-inch rack size. In addition, the unit's width is 105 mm, which makes it possible for four units to be accommodated in a 19-inch rack.

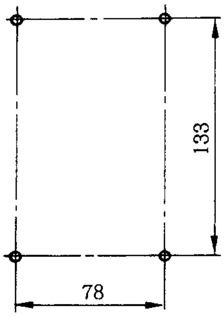
足の外し方
Removal of Legs



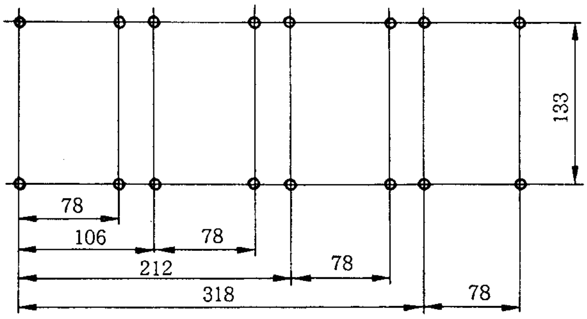
4本を外し足を取る
Unscrew four screws
and remove the legs.

取付寸法
Installing demension

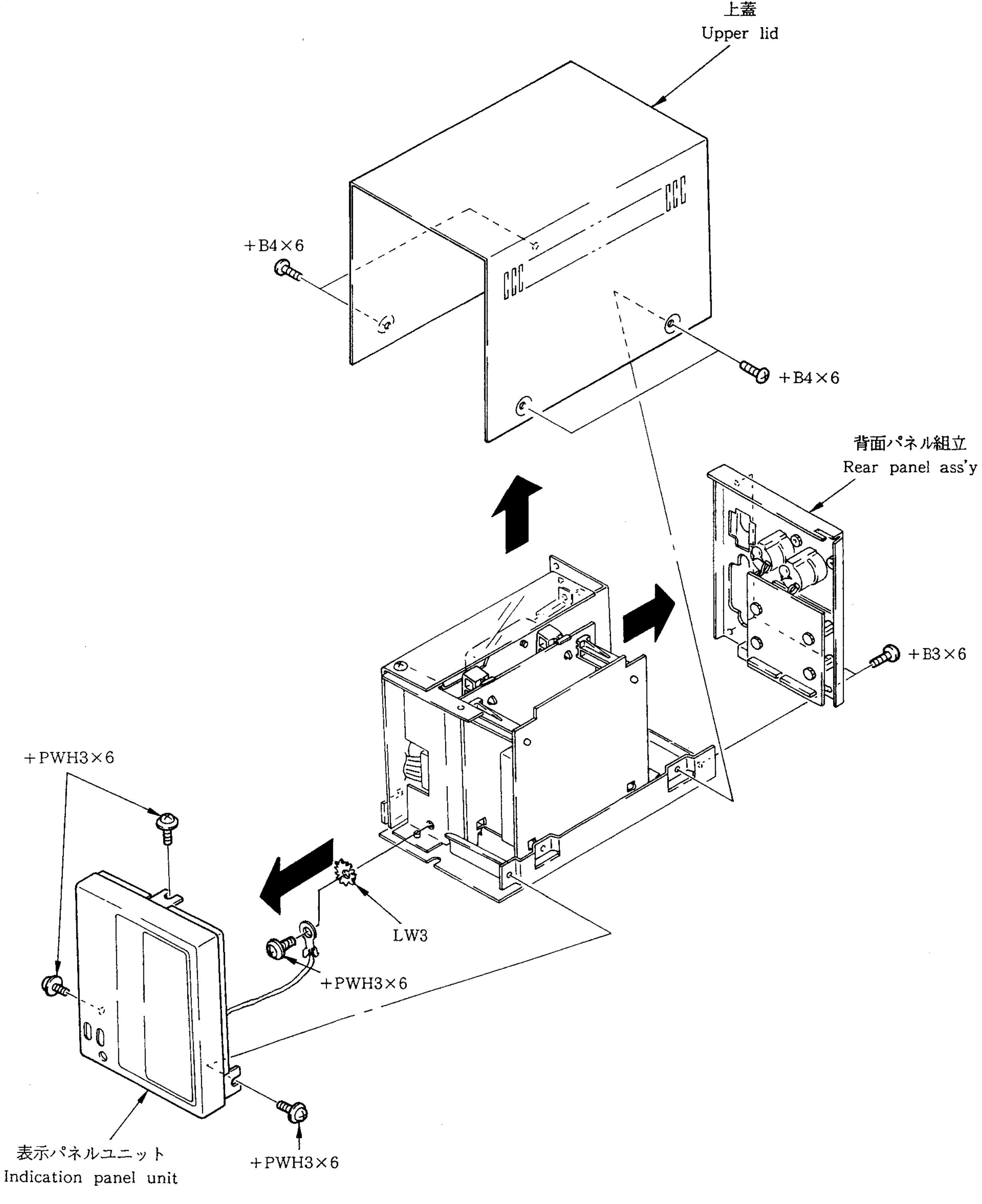
1台の場合
Case of 1 unit.



4台の場合
Case of 4 units.



1－3. 外装の取り外し
1－3. CASE REMOVAL

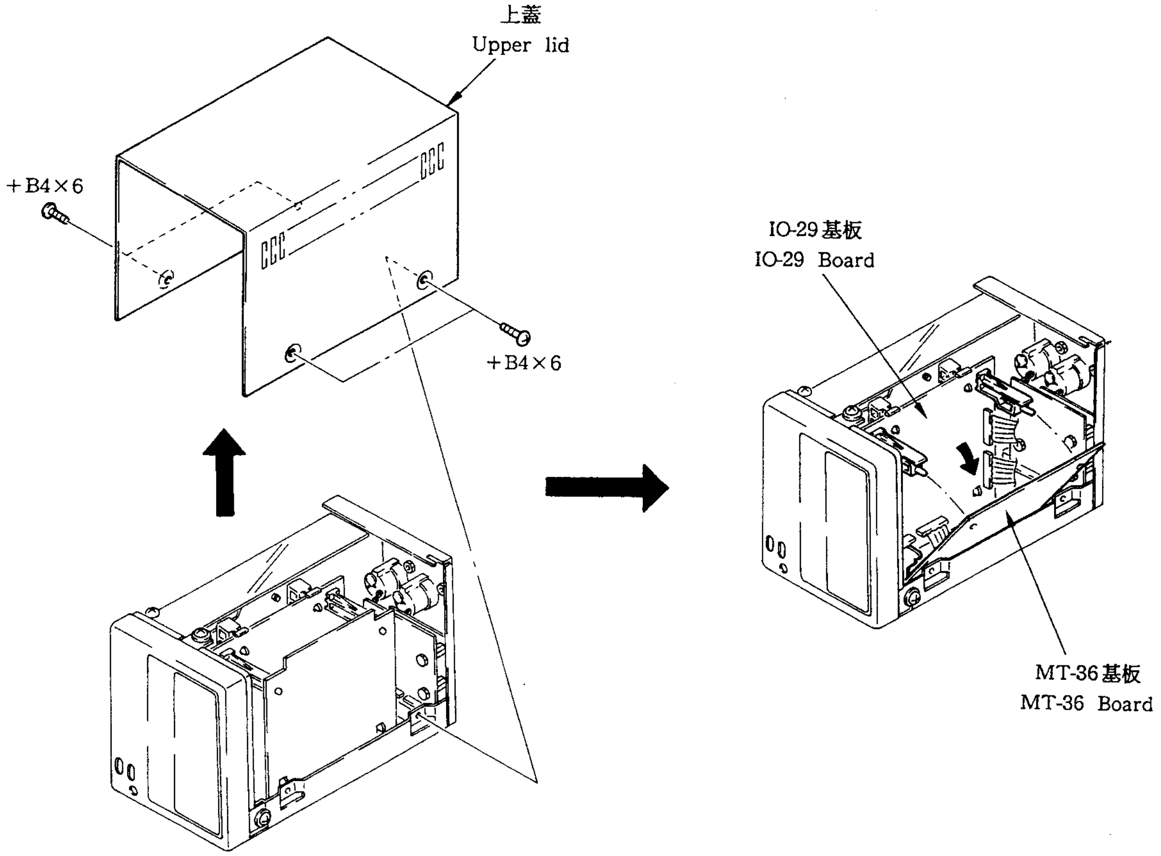

上蓋
Upper lid
＋B4×6
＋B4×6
背面パネル組立
Rear panel ass'y
＋B3×6
＋PWH3×6
LW3
＋PWH3×6
表示パネルユニット
Indication panel unit
＋PWH3×6

1−4. プリント基板上のスイッチ

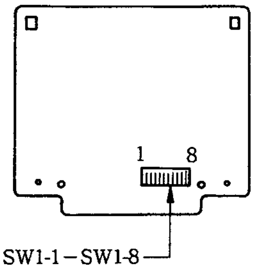
プリント基板上のスイッチを調整するときは、上蓋のねじ（＋B4×6）４本を外し、MT-36基板を傾けて行います。

1−4. .SWITCHES ON THE PRINTED CIRCUIT BOARD

In order to adjust the switches on the printed circuit board, first remove the four screws (+B4×6) securing the upper lid and tilt the MT-36 board.


上蓋
Upper lid
+B4×6
+B4×6
IO-29基板
IO-29 Board
MT-36基板
MT-36 Board

MT-36 BOARD



SW1-1、SW1-2、SW1-3：過大レベル表示調整スイッチ

フルスケール信号が何ワード連続したらOVERレベルインジケーターを点灯させ、過大レベルを表示するかを設定します。

スイッチ番号			ワード数
1	2	3	
OFF	ON	ON	1
ON	OFF	ON	2
OFF	OFF	ON	3
ON	ON	OFF	4
OFF	ON	OFF	5
ON	OFF	OFF	6
OFF	OFF	OFF	7

工場出荷時の設定：4ワード（SW1-1およびSW1-2：ON、SW1-3：OFF）

ご注意

SW1-1～SW1-3のすべてをONにすると、常に過大レベルとなってしまいます。必ずいずれかのスイッチをOFFにして使用してください。

SW1-4～SW1-8：モード切り換えスイッチ

ピークホールドタイムとリリースタイムの設定、およびOVERインジケーターをホールドするかどうかの選択をします。

スイッチ番号	表示内容	スイッチの設定	
		OFF	ON
4	ピークホールドタイム	約1.5秒	約4秒
5	リリースタイム	約50ミリ秒	約100ミリ秒
6	OVERレベルインジケーター	ホールド	ホールドなし
7, 8	未使用		

工場出荷時の設定：すべてOFF

SW1-1, SW1-2, SW1-3 : Overload indication adjustment switches

These switches set the number of words in a full scale of signals (overload signals) which are continuously input to the unit, and are indicated with the OVER level indicator on the level meters.

Switch No.			Number of words
1	2	3	
OFF	ON	ON	1
ON	OFF	ON	2
OFF	OFF	ON	3
ON	ON	OFF	4
OFF	ON	OFF	5
ON	OFF	OFF	6
OFF	OFF	OFF	7

Factory preset setting : 4 words (SW1-1, SW1-2 : ON, SW1-3 : OFF)

Note :

If all switches (SW1-1 to SW1-3) are set to ON, the meters will always indicate an overload level. Make sure that at least one of these switches is set to OFF.

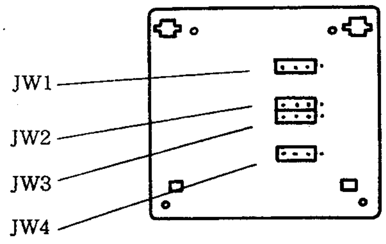
SW1-4 to SW1-8 : Mode selectors

These switches select the level meter indication modes. They set the peak hold time and release time, and determine whether the overload indication is to be held or not.

Switch No.	Indication mode	Switch position	
		OFF	ON
4	Peak hold time	About 1.5 sec.	About 4 sec.
5	Release time	About 50 msec.	About 100 msec.
6	Overload level	Held	Not held
7, 8	Not used		

Factory preset setting : All switches are set to OFF.

IO-29 BOARD

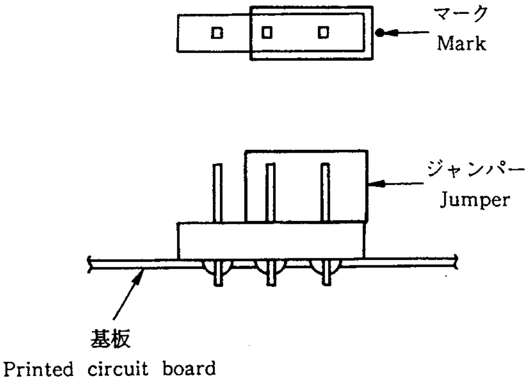


JW1～JW4：エラー表示モード切り換えジャンパー

PCM-1610／1630のステータス出力端子と本機のSTATUS INPUT端子を接続しているとき、エラー表示モードを切り換えます。切り換えは、ジャンパーの差し替えにより行います。

JW1 to JW4 : Jumpers for selecting the error indication mode

When the status output from the PCM-1630/1610 is supplied to the STATUS INPUT connector of this unit, these jumpers select the error indication mode. To change the mode, change the position of the jumpers.



●マーク側：通常モード
●マークの逆側：ホールドモード

Side marked with “ ● ” : Normal mode
Opposite side : Hold mode

ホールドモードでは、一度ミューティング、前値ホールド、平均値補間、パリティエラーが発生すると、リセットするまで該当のエラー表示インジケーターが点灯し続けます。エラー表示ホールドモードのリセットをするときは、前面パネルのPEAK表示モード切り換えスイッチを異なる位置に切り換えるか、または裏面のREMOTE端子に接続するリモートスイッチにより、解除することができます。

工場出荷時の設定：通常モード

When an error has occured in the hold mode, and the error concealment or muting circuit are activated, the corresponding error indicator lights up and stays lit until the hold mode is reset. To reset the error hold mode, simply switch the PEAK indication mode selector on the front panel, to any other position, or change the position of the remote switch connected to the REMOTE connector on the rear.

Factory preset setting : Normal mode

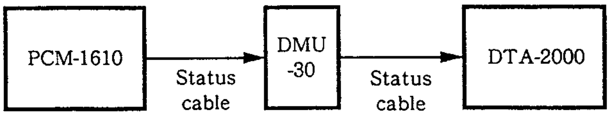
1－5. DMU-30と他機との接続上の注意

DMU-30とPCM-1610とDTA-2000の接続時には、PCM-1610の改修が必要です。

1－5. PRECAUTION FOR CONNECTING THE DMU-30 WITH OTHER DEVICES

When connecting the DMU-30 to the PCM-1610 and the DTA-2000, it is necessary to modify the PCM-1610.

Connection :

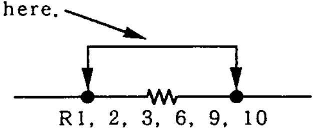

PCM-1610
Status cable
DMU -30
Status cable
DTA-2000

上記の接続の場合、PCM-1610のCON-2基板の改修が必要です。

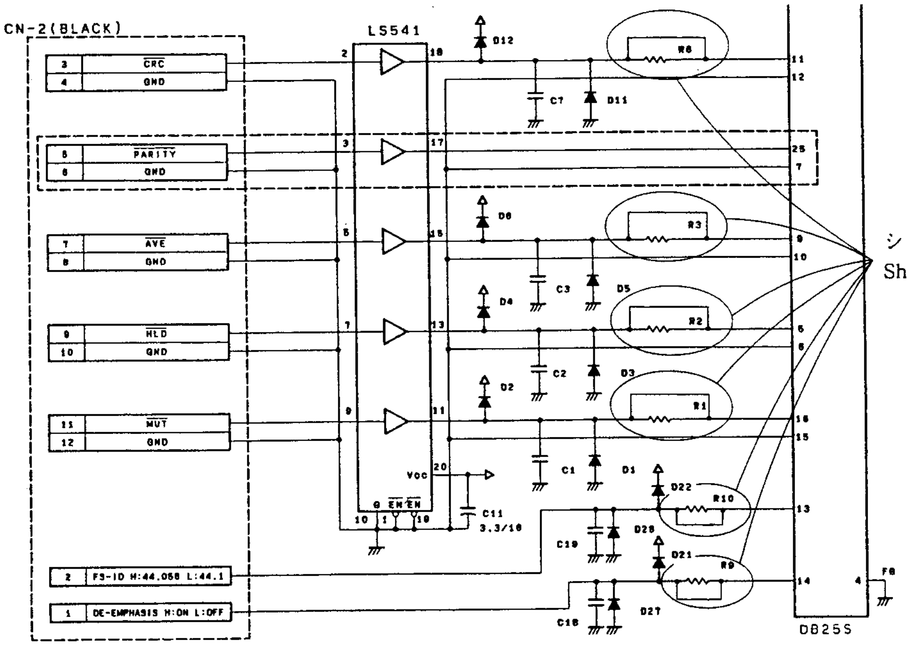
When making the above connections, it is necessary to modify the CON-2 board of the PCM-1610.

R1 (110 Ω 1／6W)
R2 (110 Ω 1／6W)
R3 (110 Ω 1／6W)
R6 (110 Ω 1／6W)
R9 (110 Ω 1／6W)
R10 (110 Ω 1／6W)

ショートする。
Short-circuit here.



CIRCUIT DIAGRAM OF CON-2 BOARD


CN-2(BLACK)
CRC
GND
PARITY
GND
AVE
GND
HLD
GND
MUT
GND
F3-ID H:44.056 L:44.1
DE-EMPHASIS H:ON L:OFF
LS541
VCC
G EN EN
C11 3.3/16
D12
C7
D11
R6
D6
R3
C3
D5
D4
R2
C2
D3
D2
R1
C1
D1
D22
R10
C19
D20
D21
R9
C18
D27
F6
DB25S

ショート
Short-circuit.

第2章　電気調整
SECTION 2 ELECTRICAL ADJUSTMENT

11.2783MHz発振周波数調整

使用機械

(1) 周波数カウンター
(2) 調整ドライバー（7-700-733-01）

調整

1. 電源を投入する。
2. MT-36基板のEP1、TP1に周波数カウンターを接続する。
3. RV1をまわして、周波数カウンターの値を11.2783MHzに合せる。
   規格：11.2783±0.0001MHz

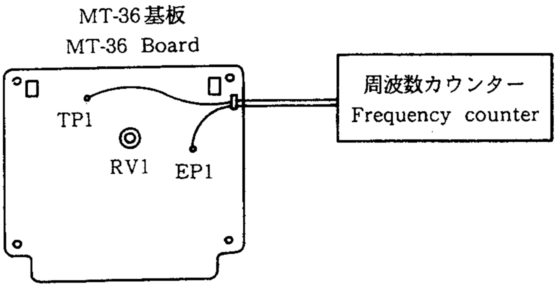
11.2783 MHz oscillation frequency adjustment

Equipment Required :

(1) Frequency counter
(2) Adjustment screwdriver (7-700-733-01)
    (Hexagonal core alignment)

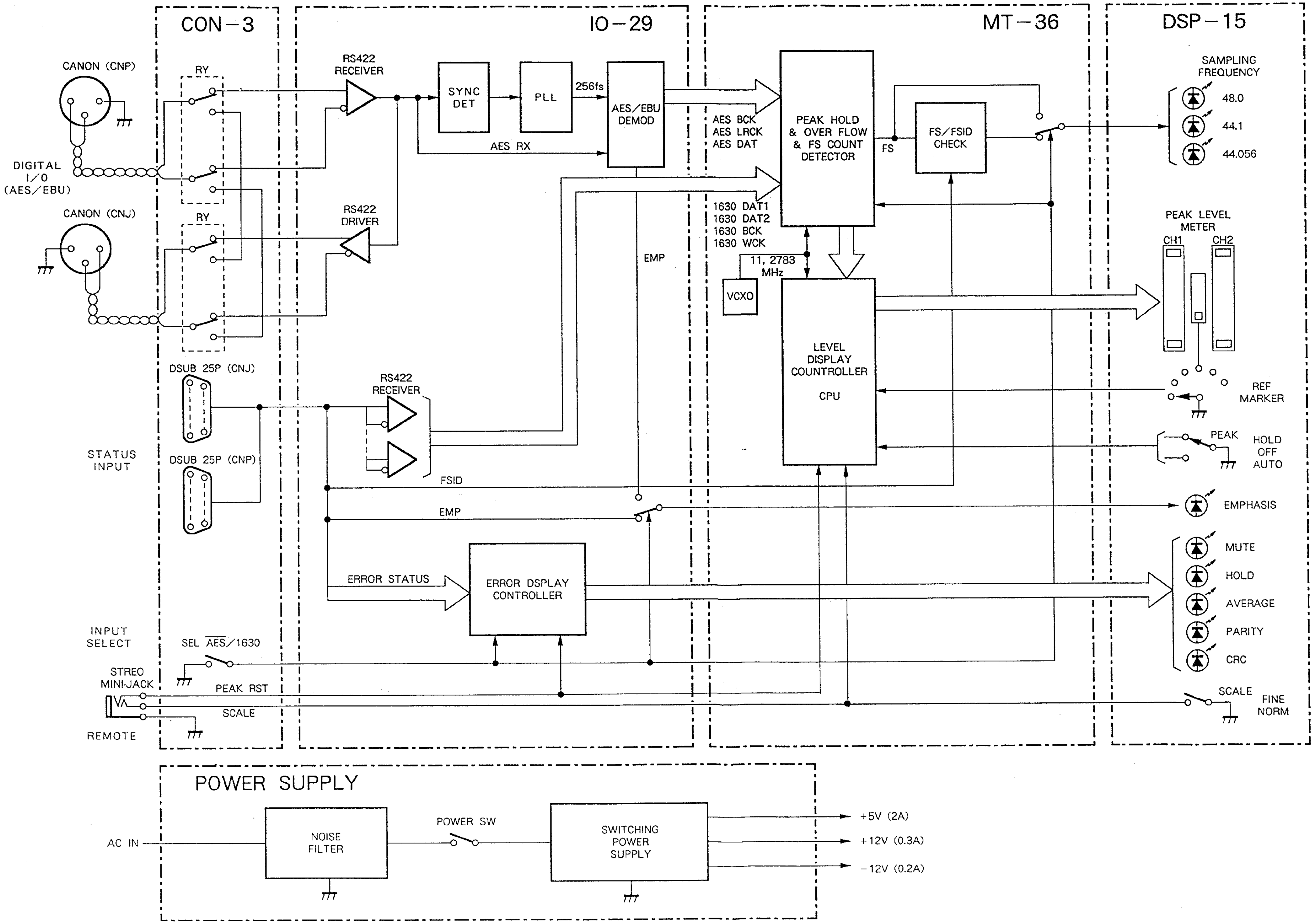
Adjustment procedure :

1. Switch on the power.
2. Connect the frequency counter to EP1 and TP1 on the MT-36 board.
3. Rotate RV1 until the value shown on the frequency counter is set to 11.2783 MHz.
   Spec. : 11.2783±0.0001 MHz



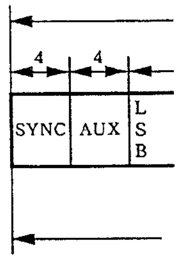
SECTION A
BLOCK DIAGRAM AND CIRCUIT DESCRIPTION

OVERALL BLOCK DIAGRAM


CON-3
IO-29
MT-36
DSP-15
CANON (CNP)
CANON (CNJ)
DIGITAL I/O (AES/EBU)
RY
RY
RS422 RECEIVER
RS422 DRIVER
SYNC DET
PLL
256fs
AES/EBU DEMOD
AES RX
EMP
AES BCK
AES LRCK
AES DAT
1630 DAT1
1630 DAT2
1630 BCK
1630 WCK
11, 2783 MHz
VCXO
PEAK HOLD & OVER FLOW & FS COUNT DETECTOR
FS
FS/FSID CHECK
LEVEL DISPLAY COUNTROLLER
CPU
SAMPLING FREQUENCY
48.0
44.1
44.056
PEAK LEVEL METER
CH1
CH2
REF MARKER
PEAK
HOLD
OFF
AUTO
EMPHASIS
MUTE
HOLD
AVERAGE
PARITY
CRC
SCALE
FINE
NORM
DSUB 25P (CNJ)
DSUB 25P (CNP)
STATUS INPUT
RS422 RECEIVER
FSID
EMP
ERROR STATUS
ERROR DSPLAY CONTROLLER
INPUT SELECT
SEL AES/1630
STREO MINI-JACK
PEAK RST
SCALE
REMOTE
POWER SUPPLY
AC IN
NOISE FILTER
POWER SW
SWITCHING POWER SUPPLY
+5V (2A)
+12V (0.3A)
-12V (0.2A)

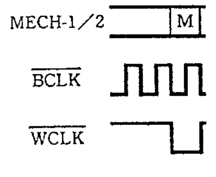
【データ入出力信

1. DIGITAL I/
DMU-30では2
いますので、サ
BにCH-2が割
サブフレーム内

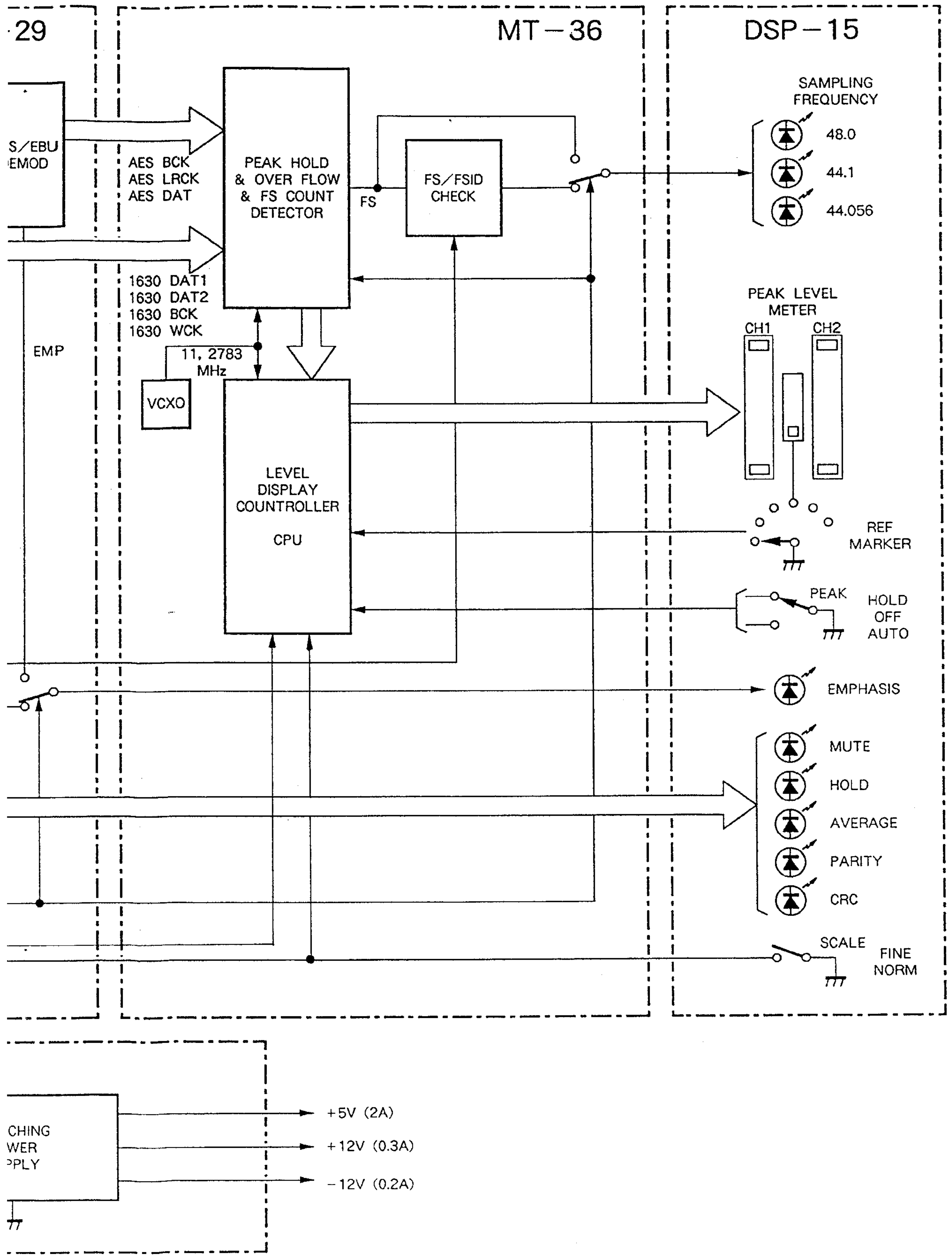

4
4
SYNC
AUX
L S B

192フレーム（
ステータスが2
する構成をとっ
と呼びます。）
DMU-30では、
ビットは見てい

2. STATUS INF


MECH-1/2
M
BCLK
WCLK
Others

(CRC, FsLD, EMPを
(Except CRC, FsLD,

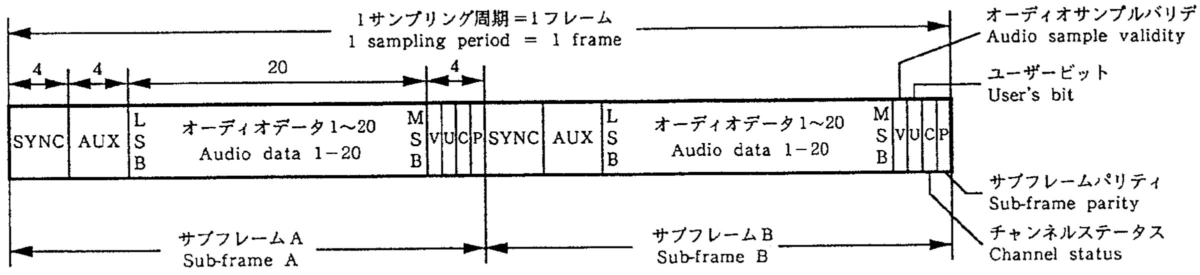

29
MT－36
DSP－15
S/EBU
EMOD
AES BCK
AES LRCK
AES DAT
PEAK HOLD & OVER FLOW & FS COUNT DETECTOR
FS
FS/FSID CHECK
SAMPLING FREQUENCY
48.0
44.1
44.056
1630 DAT1
1630 DAT2
1630 BCK
1630 WCK
EMP
11. 2783 MHz
VCXO
PEAK LEVEL METER
CH1
CH2
LEVEL DISPLAY COUNTROLLER
CPU
REF MARKER
PEAK
HOLD
OFF
AUTO
EMPHASIS
MUTE
HOLD
AVERAGE
PARITY
CRC
SCALE
FINE
NORM
CHING
WER
PLY
+5V (2A)
+12V (0.3A)
−12V (0.2A)

【データ入出力信号】

【DATA INPUT/OUTPUT SIGNALS】

1. DIGITAL I/O (AES/EBU)
DMU-30では2チャンネルステレオモードを採用していますので、サブフレームAにCH-1が、サブフレームBにCH-2が割り当てられます。
サブフレーム内の構成は下図のとおりです。

1. DIGITAL I/O (AES/EBU)
A 2-channel stereo mode is adopted in the DMU-30. CH-1 is allotted to sub-frame A and CH-2 to sub-frame B.
The configuration inside the sub-frame is shown in the figure below.

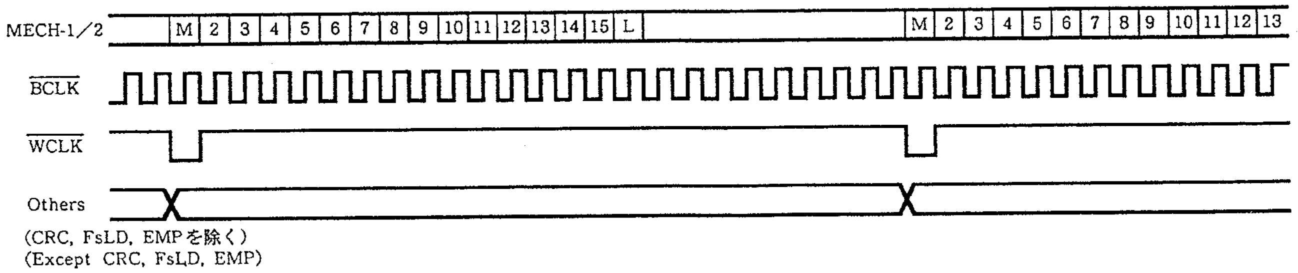

1サンプリング周期＝1フレーム
1 sampling period = 1 frame
4
4
20
4
SYNC
AUX
LSB
オーディオデータ1〜20
Audio data 1−20
MSB
V
U
C
P
SYNC
AUX
LSB
オーディオデータ1〜20
Audio data 1−20
MSB
V
U
C
P
オーディオサンプルバリディティ
Audio sample validity
ユーザービット
User's bit
サブフレームパリティ
Sub-frame parity
チャンネルステータス
Channel status
サブフレームA
Sub-frame A
サブフレームB
Sub-frame B

192フレーム（192サンプリング周期）でチャンネルステータスが24バイト集まり、1ブロックとして完結する構成をとっています。（192フレームを1ブロックと呼びます。）
DMU-30では、EMPHASISビットを見ていますが、FSビットは見ていません。

192 Frames (192 sampling periods), providing channel status of 24 bytes, construct one block. The EMPHASIS bit is recognized by the DMU-30, but the FS bit is not recognized.

2. STATUS INPUT

2. STATUS INPUT


MECH-1/2
M
2
3
4
5
6
7
8
9
10
11
12
13
14
15
L
M
2
3
4
5
6
7
8
9
10
11
12
13
BCLK
WCLK
Others
(CRC, FsLD, EMPを除く)
(Except CRC, FsLD, EMP)

IO-29基板

IO-29基板は、PCM-1610／1630ステータス入力信号及びAES／EBU入力信号から、必要なデータを抜き取り、MT-36基板に送る働きをしている。

CON-3基板を通して送られてくるPCM-1610／1630ステータス情報の中で、MECH-1、ME$\overline{\text{CH-1}}$、MECH-2、ME$\overline{\text{CH-2}}$、BCLK、$\overline{\text{BCLK}}$、WCLK、$\overline{\text{WCLK}}$はRS422 RECEIVER Am26LS32（IC6）でTTLレベルに変換され、MT-36基板に送られる。エラー情報のHOLD、AVERAGE、PARITY信号は、モノマルチ（IC2、3）で、一定時間（15msec）延長され、MUTE信号は、そのまま、エラー表示モード選択回路に送られる。ここで、エラー表示モードがホールド側になっている場合は、1度エラーが発生するとリセットするまで表示はホールドされる。リセットするには、$\overline{\text{PEAK RST}}$信号をLにするか、PEAK AUTO、PEAK HOLDのどちらを変化させることにより、エラー表示リッセト回路が働き、表示をリセットする。

エラー表示モードがノーマルの時は、エラー表示は、ホールドされずそのままMT-36基板に送られる。ステータス情報のうちCRCとFSID、$\overline{\text{SCALE}}$信号は、そのままMT-36基板に送られる。

AES TX、AES $\overline{\text{TX}}$は、RS422 RECEIVER & DRIVER SN75178（IC1）でTTLレベルに変換され、SYNC DET回路に送られる。一方TTLレベルに変換されたデータは、再度RS422レベルに変換されCON-3基板に送られる。

SYNC DET回路は、AES／EBUデータより、1.5Tを抜き取りPLL回路のREF信号とする。PLL回路では、256Fsのデータ抜き取り用CLKを作る。このPLL回路のロックレンジは、Fs32kHz～54kHzを十分にカバーするように設計されている。PLL回路で作られた256Fs CLKとAES／EBUデータはAES／EBU DEMODULATOR CX23053（IC12）に送られAES LRCK、AES BCK、AES DATに復調されMT-36基板に送られる。又AES／EBUデータの中からEMPHASIS情報が抜き取られ、SEL $\overline{\text{AES}}$／1630信号により選択されたEMPHASIS情報が抜き取られ、SEL AES／1630信号により選択されたEMPHASIS情報がMT-36基板に送られる。INPUT SELECTスイッチがAES／EBUにセットされているとSEL $\overline{\text{AES}}$／1630信号はLOWになり、エラー情報は無効となる。

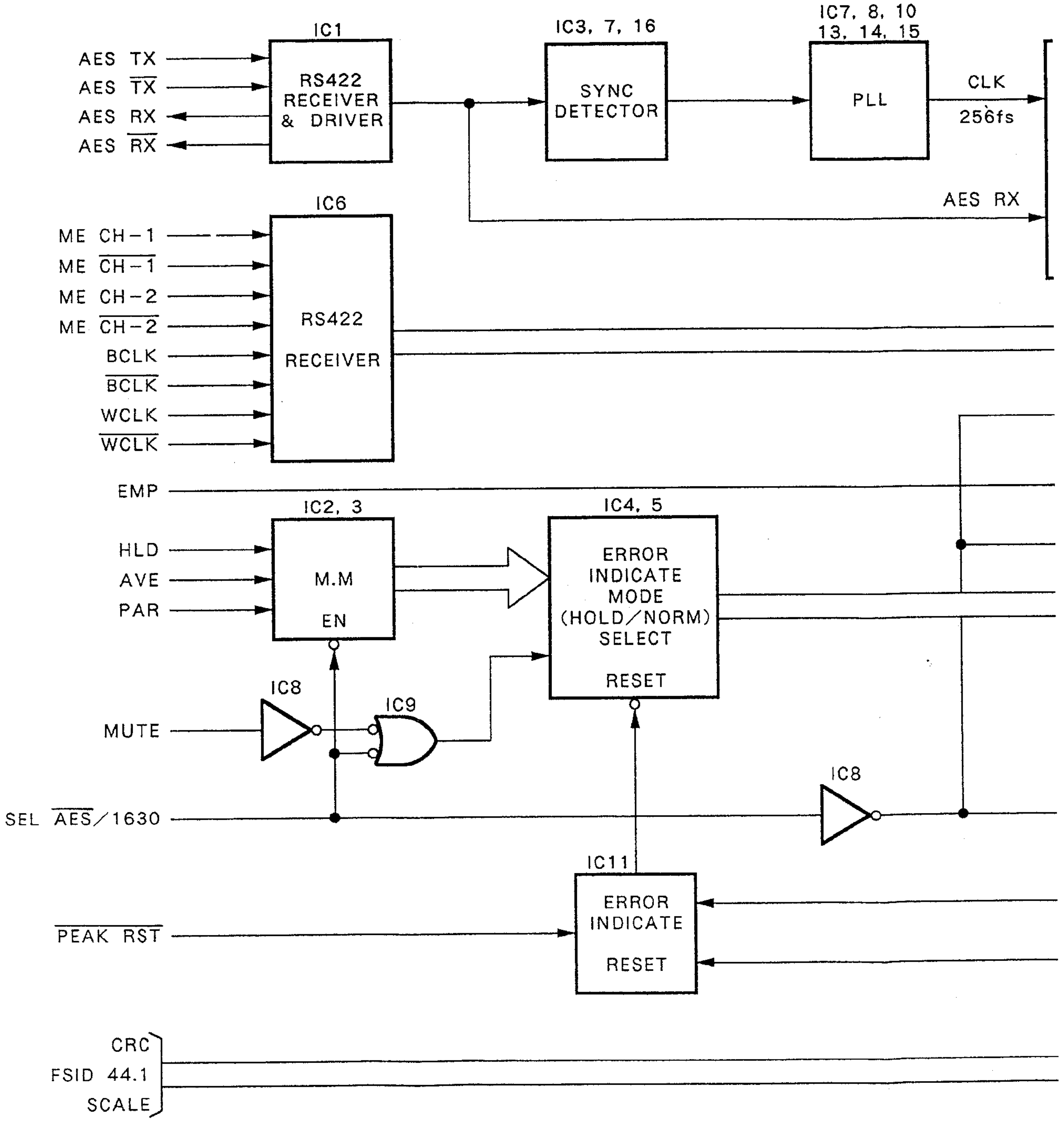
Operation of the IO-29 PCB

The IO-29 PCB extracts the necessary data from the PCM-1610／1630 status input signals and from the AES／EBU input signals and sends that data to the MT-36 board.

Of the PCM-1610／1630 status data sent via the CON-3 board, the MECH-1, ME$\overline{\text{CH-1}}$, MECH-2, ME$\overline{\text{CH-2}}$, BCLK, $\overline{\text{BCLK}}$, WCLK, and $\overline{\text{WCLK}}$ signals are converted to TTL levels by the RS422 receiver Am26LS32 (IC6) and sent to the MT-36 board. The error signals, HOLD AVERAGE, and PARITY are delayed for 15 ms by the mono-multiplier (IC2 and IC3). The Mute signal is sent as is to the error display mode selection circuit. When the error display mode is in the Hold position, if an error occurs the display is held until the reset. The $\overline{\text{PEAK RST}}$ signal is set low or either the PEAK AUTO or PEAK HOLD signal is changed to trigger the error display reset circuit and reset the display. If the error display mode is normal, the error display is not held and is sent to the MT-36 PCB as is. Of the status data, the CRC, FSID, and $\overline{\text{SCALE}}$ signals are sent to the MT-36 PCB as is.

AES TX and AES $\overline{\text{TX}}$ are converted to TTL levels by the RS422 receiver & driver SN75178 (IC1) and sent to the SYNC DET circuit. On the other hand, the data that has been converted to TTL levels is converted back to RS422 levels and sent to the CON-3 board. The SYNC DET circuit extracts 1.5T from the AES／EBU data to makes REF signal for the PLL circuit. The PLL circuit makes the CLK signal for extracting the 256 Fs data. The lock of the PLL circuit is designed to adequately cover the range of Fs from 32 kHz to 54 kHz. The 256 Fs CLK signal made in the PLL circuit and the AES／EBU data are sent to the AES／EBU demodulator CX23053 (IC12), demodulated into the AES LRCK, AES BCK, and AES DAT signals and sent to the MT-36 PCB. The Emphasis data is extracted from the AES／EBU data and the Emphasis data selected by the SEL $\overline{\text{AES}}$／1630 signal is sent to the MT-36 board. When the INPUT SELECT switch is set to AES／EBU, the SEL $\overline{\text{AES}}$／1630 signal is set low and the error data is disabled.

IO-29 BOARD BLOCK DIAGRAM


IC1
RS422 RECEIVER & DRIVER
IC3, 7, 16
SYNC DETECTOR
IC7, 8, 10, 13, 14, 15
PLL
CLK
256fs
AES RX
AES TX
AES $\overline{\text{TX}}$
AES RX
AES $\overline{\text{RX}}$
IC6
RS422 RECEIVER
ME CH-1
ME $\overline{\text{CH-1}}$
ME CH-2
ME $\overline{\text{CH-2}}$
BCLK
$\overline{\text{BCLK}}$
WCLK
$\overline{\text{WCLK}}$
EMP
IC2, 3
M.M
EN
HLD
AVE
PAR
IC4, 5
ERROR INDICATE MODE (HOLD／NORM) SELECT
RESET
IC8
IC9
MUTE
IC8
SEL $\overline{\text{AES}}$／1630
IC11
ERROR INDICATE
RESET
$\overline{\text{PEAK RST}}$
CRC
FSID 44.1
SCALE

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T, MECH-2,
CLK signals
422 receiver
IT-36 board.
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PEAK AUTO
trigger the
the display.
error display
5 PCB as is.
and SCALE
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75178 (IC1)
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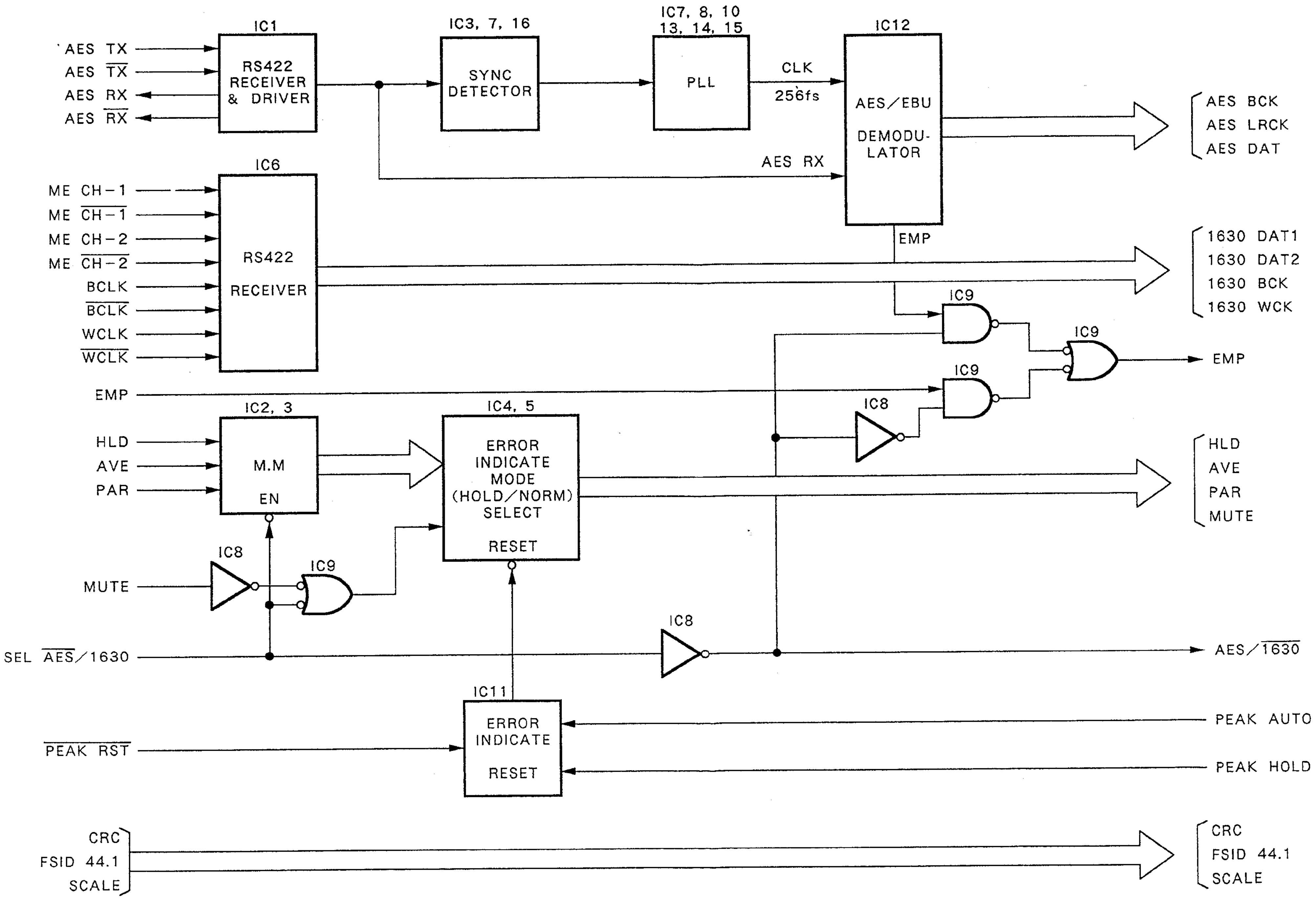
IO-29 BOARD BLOCK DIAGRAM



IC1
RS422 RECEIVER & DRIVER
AES TX
AES TX
AES RX
AES RX
IC3, 7, 16
SYNC DETECTOR
IC7, 8, 10 13, 14, 15
PLL
CLK
256fs
IC12
AES/EBU DEMODULATOR
AES RX
AES BCK
AES LRCK
AES DAT
IC6
RS422 RECEIVER
ME CH−1
ME CH−1
ME CH−2
ME CH−2
BCLK
BCLK
WCLK
WCLK
EMP
1630 DAT1
1630 DAT2
1630 BCK
1630 WCK
IC9
IC9
IC9
EMP
IC8
EMP
IC2, 3
M.M
EN
HLD
AVE
PAR
IC4, 5
ERROR INDICATE MODE (HOLD/NORM) SELECT
RESET
HLD
AVE
PAR
MUTE
IC8
IC9
MUTE
IC8
SEL AES/1630
AES/1630
IC11
ERROR INDICATE
RESET
PEAK RST
PEAK AUTO
PEAK HOLD
CRC
FSID 44.1
SCALE
CRC
FSID 44.1
SCALE

MT-36基板

IO-29基板より送られて来たメーター情報は、PEAK HOLD & OVER FLOW & FS DETECTOR CX1134Q (IC9) に入力される。CX1134Q (IC9) は、AES／$\overline{1630}$信号が、Lの時は、PCM-1610／1630ステータス入力より送られて来た情報を、Hの時は、AES／EBU入力より送られて来た情報を、16ビットのレベル情報に変換し、CPU (IC6) が、読みに行くまで、最大値をホールドしている。さらに、外部ビットスイッチ (SW1) により設定されたワード数に従ってオーバーフローを検出し、16ビット情報の最上位ビットに1を立てる。これによりCPU (IC6) は、オーバーフローが発生したことを知り、オーバーフローLEDを点灯させる。又、水晶の発振周波数11.2783MHzを基準CLKとして、入力信号のFsをカウントし、48kHz、44.1kHz、44.056kHzのいずれかを識別する。ここで、識別されたFsは、入力がAES／EBUの場合は、そのまま、入力が、PCM-1610／1630の場合は、FS／FSID CHECK回路で、FSIDとの照合が行われ一致しない場合は、Fsを点滅させる。

CPU (IC6) は、CX1134Q (IC9) から、送られた16ビットのレベル情報を8ビットづつ2回に分けて取り込み、内蔵ROMのリフトに従って、各CHの32セグメントLEDを16個の4セグメントに分けてダイナミック点灯する。CPU (IC6) からの処理データは、セグメントドライバー (Q18～25) により各セグメントのLEDのアノードを制御するMA1～4として出力されさらに、IO EXPANDER PORT (IC10) を経て、デジットドライバー (Q2～17) により、各セグメントの16個のLEDのカソードを制御するMD0～15として出力される。(表示レベルと入力データの関係は後出の "TABLE FOR METER INDICATION AND INPUT DATA" を参照して下さい。)

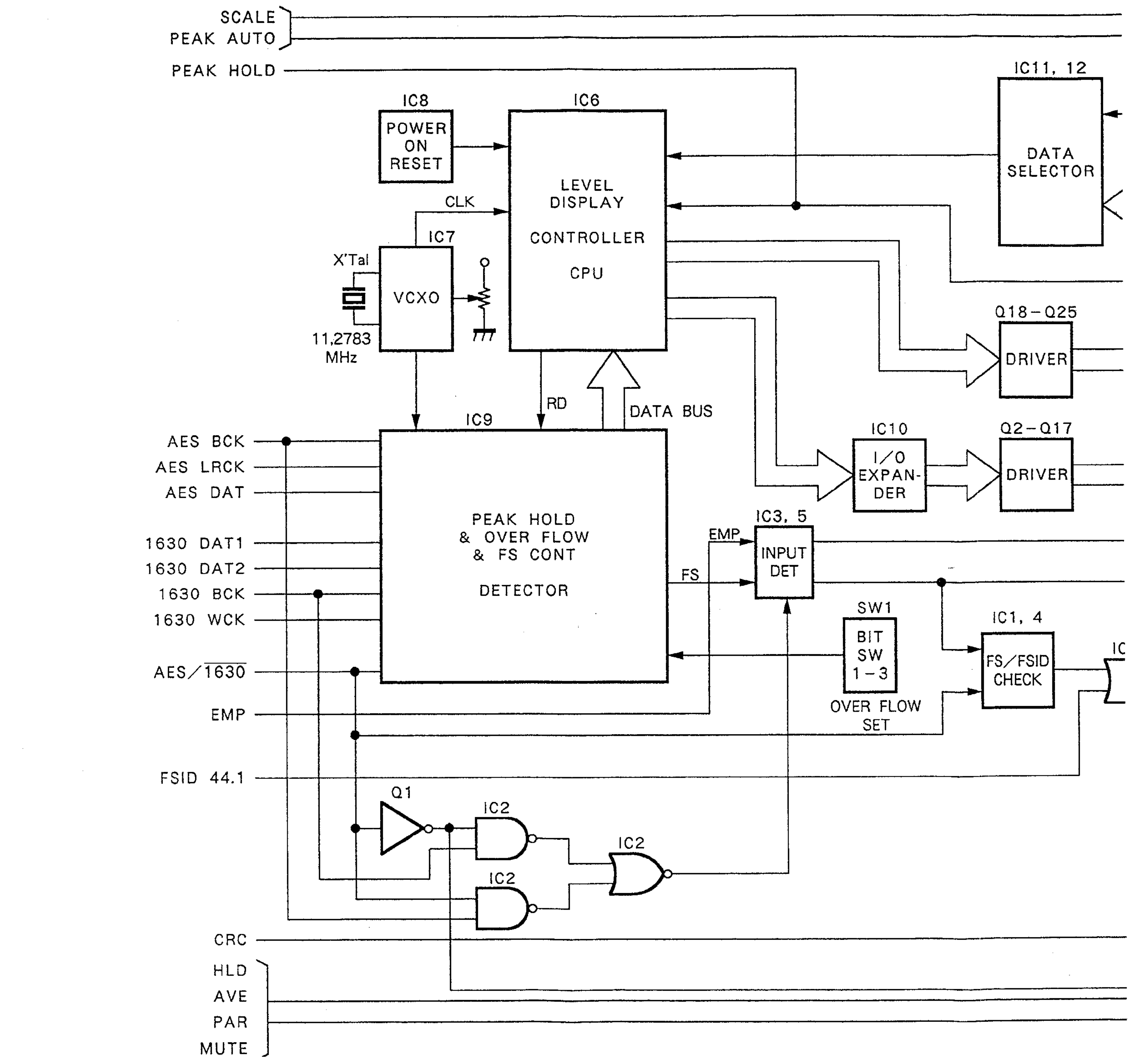
さらにCPU (IC6) は、外部ビットスイッチ (SW1) からの信号及びDSP-15基板からの信号HR1～6、$\overline{\text{SCALE}}$、PEAK AUTO、PEAK HOLDの信号をデータセレクター (IC11、12) を経て取り込み、それに基づいてデータ処理を行う。

Operation of the MT-36 PCB

The meter data from the IO-29 board is input to the peak hold & overflow & FS detector CX1134Q (IC9). When the AES／$\overline{1630}$ signal is low, the CX1134Q (IC9) converts the data sent from the PCM-1610／1630 status input to 16-bit level data; when the AES／$\overline{1630}$ signal is high, the CX1134Q (IC9) converts the data sent from the AES／EBU input to 16-bit level data and holds the maximum value until the CPU (IC6) comes to read it. The CX1134Q (IC9) detects an overflow according to the number of words set by the external bit switch (SW1), and it sets 1 in the uppermost bit of the 16-bit data. The CPU (IC6) detects that there has been an overflow and it lights up the overflow LED. The CX1134Q (IC9) counts the Fs of the input signal using the 11.2783 MHz crystal oscillator as the reference clock to determine whether the sampling frequency is 48 kHz, 44.1 kHz, or 44.056 kHz. When the selected Fs is AES／EBU, the input is used as is; when the Fs is PCM-1610／1630, the input is compared with FSID in the FS／FSID Check circuit and if it does not match, the selected Fs is blinked. The CPU (IC6) divides the 16-bit level data from the CX1134Q (IC9) into two pairs of 8-bit data and takes it in and divides the 32-segment LED for each channel into 16 sets of four segments according to the built-in ROM software and lights up the LEDs dynamically. The processing data from the CPU (IC6) is output as the MA1－4 signals that control the LED anodes of each segment with the segment drivers (Q18－25) and, via the IO expander port (IC10), as the MD0－15 signals that control the 16 LED cathodes of each segment with the digit drivers (Q2－Q17). (The relationship between the display levels and the input data is shown in the "Table for Meter Indication and Input Data".)

Also, the CPU (IC6) takes in the signals from the external bit switch (SW1), and the $\overline{\text{SCALE}}$, PEAK AUTO, PEAK HOLD, and HR1－6 signals from the DSP-15 PCB via the data selector (IC11 and IC12), and the CPU controls the display mode based on the data.

MT-36 BOARD BLOCK DIAGRAM


SCALE
PEAK AUTO
PEAK HOLD
IC11, 12
DATA SELECTOR
IC8
POWER ON RESET
IC6
LEVEL DISPLAY CONTROLLER CPU
CLK
IC7
X'Tal
VCXO
11.2783 MHz
Q18－Q25
DRIVER
RD
DATA BUS
IC9
IC10
I/O EXPAN-DER
Q2－Q17
DRIVER
AES BCK
AES LRCK
AES DAT
1630 DAT1
1630 DAT2
1630 BCK
1630 WCK
AES/$\overline{1630}$
EMP
FSID 44.1
PEAK HOLD & OVER FLOW & FS CONT DETECTOR
EMP
FS
IC3, 5
INPUT DET
SW1
BIT SW 1－3
OVER FLOW SET
IC1, 4
FS/FSID CHECK
IC
Q1
IC2
IC2
IC2
CRC
HLD
AVE
PAR
MUTE

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X1134Q
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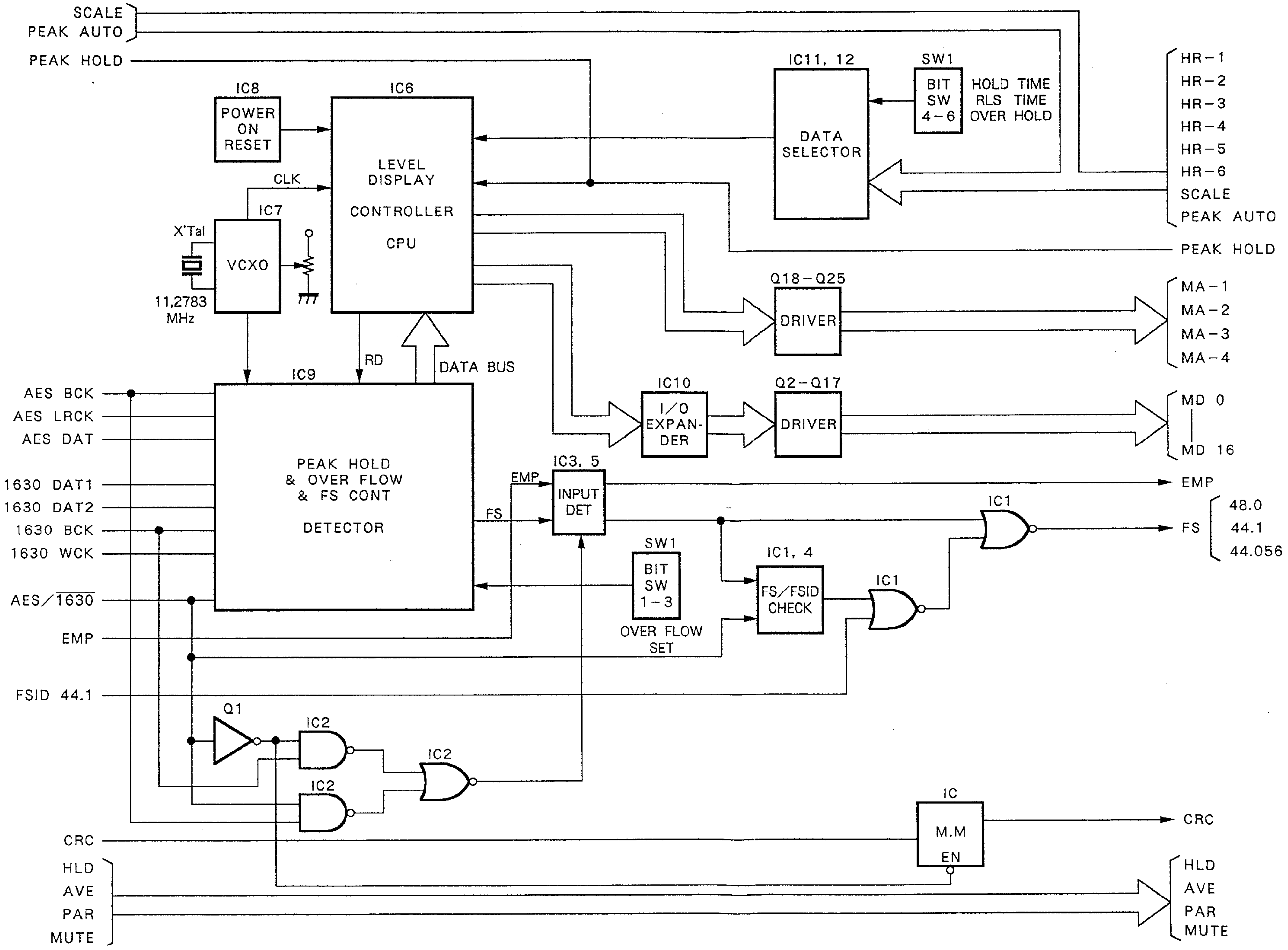
MT-36 BOARD BLOCK DIAGRAM


SCALE
PEAK AUTO
PEAK HOLD
IC8
POWER ON RESET
IC6
LEVEL DISPLAY CONTROLLER
CPU
CLK
IC7
X'Tal
VCXO
11.2783 MHz
IC11, 12
DATA SELECTOR
SW1
BIT SW 4-6
HOLD TIME
RLS TIME
OVER HOLD
HR-1
HR-2
HR-3
HR-4
HR-5
HR-6
SCALE
PEAK AUTO
PEAK HOLD
Q18-Q25
DRIVER
MA-1
MA-2
MA-3
MA-4
RD
DATA BUS
IC9
IC10
I/O EXPAN-DER
Q2-Q17
DRIVER
MD 0
MD 16
AES BCK
AES LRCK
AES DAT
1630 DAT1
1630 DAT2
1630 BCK
1630 WCK
AES/1630
EMP
FSID 44.1
PEAK HOLD & OVER FLOW & FS CONT
DETECTOR
EMP
FS
IC3, 5
INPUT DET
SW1
BIT SW 1-3
OVER FLOW SET
IC1, 4
FS/FSID CHECK
IC1
IC1
EMP
FS
48.0
44.1
44.056
Q1
IC2
IC2
IC2
IC
M.M
EN
CRC
CRC
HLD
AVE
PAR
MUTE
HLD
AVE
PAR
MUTE

CON-3基板

STATUS入力の2個のDSUB 25Pコネクターは、CON-3基板上で、接続されておりループスルーとなっている。一方、AES／EBU入力は、電源ON時は、いったんIO-29基板に送られ、波形成形されCON-3基板に戻りAES／EBU出力となるが、電源OFF時は、CON-3上のRY1、2によりループスルーとなる。

DSP-15基板

MT-36基板からのドライブ信号によりLEDを点灯させる。DSP-15基板ではロータリースイッチのコードをデコードしてREF MARKERを点灯させ、またHR1〜6の情報をMT-36基板に送る。又PEAK HOLD、PEAK AUTO SCALEスイッチの設定に従ってその情報をMT-36 基板に送る。

Operation of the CON-3 PCB

The two status input 25-pin DSUB connectors are looped through on the CON-3 PCB. On the other hand, when the power is on, the AES/EBU input is sent to the IO-29 board, waveformed, then returned to the CON-3 board as the AES/EBU output. When the power is off, the AES/EBU input is looped through by RY1 and RY2 on the CON-3 PCB.

Operation of the DSP-15 PCB

The drive signals from the MT-36 board light up the LEDs. The DSP-15 PCB decodes the codes for the rotary switch to light up the REF MARKER and sends the HR1−6 data to the MT-36 PCB. The DSP-15 PCB also sends the data according to the PEAK HOLD, PEAK AUTO, and SCALE switch settings to the MT-36 PCB.

TABLE FOR METER INDICATION AND INPUT DATA (SCALE = NORM)

METER INDICATION (dB)	INPUT DATA (POSITIVE)																			DATA (dB) FULL SCALE 0 dB
	MAX/MIN	BINNARY																HEX	DEC	
		MSB	2	3	4	5	6	7	8	9	10	11	12	13	14	15	LSB			
0	MAX	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7FFF	32767	0
	MIN	0	1	1	1	1	0	0	0	1	1	0	1	0	1	1	0	78D6	30934	-0.5
-1	MIN	0	1	1	0	1	0	1	1	1	0	1	1	0	0	1	0	6BB2	27570	-1.5
-2	MIN	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	5FFC	24572	-2.5
-3	MIN	0	1	0	1	0	1	0	1	1	0	0	0	1	1	0	0	558C	21900	-3.5
-4	MIN	0	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	4C3F	19519	-4.5
-5	MIN	0	1	0	0	0	0	1	1	1	1	1	1	0	0	1	1	43F3	17395	-5.5
-6	MIN	0	0	1	1	1	1	0	0	1	0	0	1	0	0	0	0	3C90	15504	-6.5
-7	MIN	0	0	1	1	0	1	0	1	1	1	1	1	1	0	1	0	35FA	13818	-7.5
-8	MIN	0	0	1	1	0	0	0	0	0	0	0	1	1	0	1	1	301B	12315	-8.5
-9	MIN	0	0	1	0	1	0	1	0	1	1	1	0	0	0	0	0	2AE0	10976	-9.5
-10	MIN	0	0	1	0	0	1	0	0	0	0	0	1	0	0	1	1	2413	9235	-11.0
-12	MIN	0	0	0	1	1	1	0	0	1	0	1	0	1	0	0	0	1CA8	7336	-13.0
-14	MIN	0	0	0	1	0	1	1	0	1	1	0	0	0	0	1	1	16C3	5827	-15.0
-16	MIN	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	1214	4628	-17.0
-18	MIN	0	0	0	0	1	1	1	0	0	1	0	1	1	1	0	1	0E5D	3677	-19.0
-20	MIN	0	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	0B68	2920	-21.0
-22	MIN	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0910	2320	-23.0
-24	MIN	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	1	0733	1843	-25.0
-26	MIN	0	0	0	0	0	1	0	1	1	0	1	1	1	0	0	0	05B8	1464	-27.0
-28	MIN	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	1	048B	1163	-29.0
-30	MIN	0	0	0	0	0	0	1	1	1	0	0	1	1	0	1	1	039B	923	-31.0
-32	MIN	0	0	0	0	0	0	1	0	1	1	0	1	1	1	1	0	02DE	734	-33.0
-34	MIN	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0247	583	-35.0
-36	MIN	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	1	01CF	463	-37.0
-38	MIN	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0170	368	-39.0
-40	MIN	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0104	260	-42.0
-44	MIN	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	00A4	164	-46.0
-48	MIN	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0068	104	-50.0
-52	MIN	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0041	65	-54.0
-56	MIN	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0029	41	-58.0
-60	MIN	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	001A	26	-62.0

METER INDICATI (dB)
0
-1
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-6
-7
-8
-9
-10
-12
-14
-16
-18
-20
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TABLE FOR METER INDICATION AND INPUT DATA (SCALE = NORM)

METER INDICATION (dB)	INPUT DATA (POSITIVE)																			DATA FULL SCALE 0 dB (dB)
	MAX / MIN	BINNARY																HEX	DEC	
		MSB	2	3	4	5	6	7	8	9	10	11	12	13	14	15	LSB			
0	MAX	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7FFF	32767	0
	MIN	0	1	1	1	1	0	0	0	1	1	0	1	0	1	1	0	78D6	30934	-0.5
-1	MIN	0	1	1	0	1	0	1	1	1	0	1	1	0	0	1	0	6BB2	27570	-1.5
-2	MIN	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	5FFC	24572	-2.5
-3	MIN	0	1	0	1	0	1	0	1	1	0	0	0	1	1	0	0	558C	21900	-3.5
-4	MIN	0	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	4C3F	19519	-4.5
-5	MIN	0	1	0	0	0	0	1	1	1	1	1	1	0	0	1	1	43F3	17395	-5.5
-6	MIN	0	0	1	1	1	1	0	0	1	0	0	1	0	0	0	0	3C90	15504	-6.5
-7	MIN	0	0	1	1	0	1	0	1	1	1	1	1	1	0	1	0	35FA	13818	-7.5
-8	MIN	0	0	1	1	0	0	0	0	0	0	0	1	1	0	1	1	301B	12315	-8.5
-9	MIN	0	0	1	0	1	0	1	0	1	1	1	0	0	0	0	0	2AE0	10976	-9.5
-10	MIN	0	0	1	0	0	1	0	0	0	0	0	1	0	0	1	1	2413	9235	-11.0
-12	MIN	0	0	0	1	1	1	0	0	1	0	1	0	1	0	0	0	1CA8	7336	-13.0
-14	MIN	0	0	0	1	0	1	1	0	1	1	0	0	0	0	1	1	16C3	5827	-15.0
-16	MIN	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	1214	4628	-17.0
-18	MIN	0	0	0	0	1	1	1	0	0	1	0	1	1	1	0	1	0E5D	3677	-19.0
-20	MIN	0	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	0B68	2920	-21.0
-22	MIN	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0910	2320	-23.0
-24	MIN	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	1	0733	1843	-25.0
-26	MIN	0	0	0	0	0	1	0	1	1	0	1	1	1	0	0	0	05B8	1464	-27.0
-28	MIN	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	1	048B	1163	-29.0
-30	MIN	0	0	0	0	0	0	1	1	1	0	0	1	1	0	1	1	039B	923	-31.0
-32	MIN	0	0	0	0	0	0	1	0	1	1	0	1	1	1	1	0	02DE	734	-33.0
-34	MIN	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0247	583	-35.0
-36	MIN	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	1	01CF	463	-37.0
-38	MIN	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0170	368	-39.0
-40	MIN	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0104	260	-42.0
-44	MIN	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	00A4	164	-46.0
-48	MIN	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0068	104	-50.0
-52	MIN	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0041	65	-54.0
-56	MIN	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0029	41	-58.0
-60	MIN	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	001A	26	-62.0

METER INDICATION (dB)	INPUT DATA (NEGATIVE)																			DATA FULL SCALE 0 dB (dB)
	MAX / MIN	BINNARY																HEX	DEC	
		MSB	2	3	4	5	6	7	8	9	10	11	12	13	14	15	LSB			
0	MAX	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8000	-32768	0
	MIN	1	0	0	0	0	1	1	1	0	0	1	0	1	0	0	1	8729	-30935	-0.5
-1	MIN	1	0	0	1	0	1	0	0	0	1	0	0	1	1	0	1	944D	-27571	-1.5
-2	MIN	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	A003	-24573	-2.5
-3	MIN	1	0	1	0	1	0	1	0	0	1	1	1	0	0	1	1	AA73	-21901	-3.5
-4	MIN	1	0	1	1	0	0	1	1	1	1	0	0	0	0	0	0	B3C0	-19520	-4.5
-5	MIN	1	0	1	1	1	1	0	0	0	0	0	0	1	1	0	0	BC0C	-17396	-5.5
-6	MIN	1	1	0	0	0	0	1	1	0	1	1	0	1	1	1	1	C36F	-15505	-6.5
-7	MIN	1	1	0	0	1	0	1	0	0	0	0	0	0	1	0	1	CA05	-13819	-7.5
-8	MIN	1	1	0	0	1	1	1	1	1	1	1	0	0	1	0	0	CFE4	-12316	-8.5
-9	MIN	1	1	0	1	0	1	0	1	0	0	0	1	1	1	1	1	D51F	-10977	-9.5
-10	MIN	1	1	0	1	1	0	1	1	1	1	1	0	1	1	0	0	DBEC	-9236	-11.0
-12	MIN	1	1	1	0	0	0	1	1	0	1	0	1	0	1	1	1	E357	-7337	-13.0
-14	MIN	1	1	1	0	1	0	0	1	0	0	1	1	1	1	0	0	E93C	-5828	-15.0
-16	MIN	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	1	EDEB	-4629	-17.0
-18	MIN	1	1	1	1	0	0	0	1	1	0	1	0	0	0	1	0	F1A2	-3678	-19.0
-20	MIN	1	1	1	1	0	1	0	0	1	0	0	1	0	1	1	1	F497	-2921	-21.0
-22	MIN	1	1	1	1	0	1	1	0	1	1	1	0	1	1	1	1	F6EF	-2321	-23.0
-24	MIN	1	1	1	1	1	0	0	0	1	1	0	0	1	1	0	0	F8CC	-1844	-25.0
-26	MIN	1	1	1	1	1	0	1	0	0	1	0	0	0	1	1	1	FA47	-1465	-27.0
-28	MIN	1	1	1	1	1	0	1	1	0	1	1	1	0	1	0	0	FB74	-1164	-29.0
-30	MIN	1	1	1	1	1	1	0	0	0	1	1	0	0	1	0	0	FC68	-920	-31.0
-32	MIN	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	1	FD21	-735	-33.0
-34	MIN	1	1	1	1	1	1	0	1	1	0	1	1	1	0	0	0	FDB8	-584	-35.0
-36	MIN	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	FE30	-464	-37.0
-38	MIN	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	FE8F	-369	-39.0
-40	MIN	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	FEFB	-261	-42.0
-44	MIN	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	FF5B	-165	-46.0
-48	MIN	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	FF97	-105	-50.0
-52	MIN	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	FFBE	-66	-54.0
-56	MIN	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	FFD9	-42	-58.0
-60	MIN	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	FFE5	-27	-62.0

TABLE FOR METER INDICATION AND INPUT DATA (SCALE = FINE)

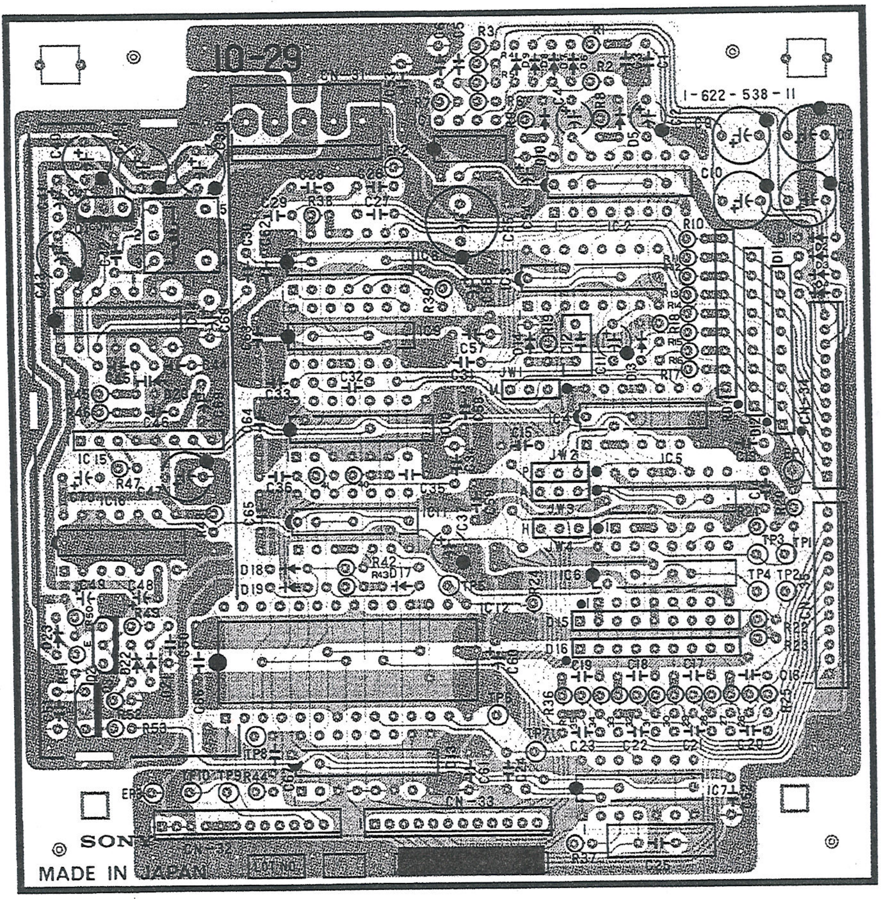
METER INDICATION (dB)	INPUT DATA (POSITIVE)																				DATA / FULL SCALE 0 dB (dB)
	MAX / MIN	BINNARY																HEX	DEC	
		MSB	2	3	4	5	6	7	8	9	10	11	12	13	14	15	LSB			
-8.0	MAX MIN	0 0	0 0	1 1	1 1	0 0	0 0	1 1	1 0	1 0	0 1	0 0	0 1	1 1	0 1	1 1	1 1	338B 325F	13195 12895	-7.9 -8.1
-8.2	MIN	0	0	1	1	0	0	0	1	0	0	1	1	1	0	1	0	313A	12602	-8.3
-8.4	MIN	0	0	1	1	0	0	0	0	0	0	0	1	1	0	1	1	301B	12315	-8.5
-8.6	MIN	0	0	1	0	1	1	1	1	0	0	0	0	0	0	1	1	2F03	12035	-8.7
-8.8	MIN	0	0	1	0	1	1	0	1	1	1	1	1	0	0	0	1	2DF1	11761	-8.9
-9.0	MIN	0	0	1	0	1	1	0	0	1	1	1	0	0	1	0	1	2CE5	11493	-9.1
-9.2	MIN	0	0	1	0	1	0	1	1	1	1	0	1	1	1	1	1	2BDF	11231	-9.3
-9.4	MIN	0	0	1	0	1	0	1	0	1	1	1	0	0	0	0	0	2AE0	10976	-9.5
-9.6	MIN	0	0	1	0	1	0	0	1	1	1	1	0	0	1	1	0	29E6	10726	-9.7
-9.8	MIN	0	0	1	0	1	0	0	0	1	1	1	1	0	0	1	0	28F2	10482	-9.9
-10.0	MIN	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	2803	10243	-10.1
-10.2	MIN	0	0	1	0	0	1	1	1	0	0	0	1	1	0	1	0	271A	10010	-10.3
-10.4	MIN	0	0	1	0	0	1	1	0	0	0	1	1	0	1	1	0	2636	9782	-10.5
-10.6	MIN	0	0	1	0	0	1	0	1	0	1	0	1	1	0	0	0	2558	9560	-10.7
-10.8	MIN	0	0	1	0	0	1	0	0	0	1	1	1	1	1	1	0	247E	9342	-10.9
-11.0	MIN	0	0	1	0	0	0	1	1	1	0	1	0	1	0	0	1	23A9	9129	-11.1
-11.2	MIN	0	0	1	0	0	0	1	0	1	1	0	1	1	0	0	1	22D9	8921	-11.3
-11.4	MIN	0	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	220E	8718	-11.5
-11.6	MIN	0	0	1	0	0	0	0	1	0	1	0	0	1	0	0	0	2148	8520	-11.7
-11.8	MIN	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0	2086	8326	-11.9
-12.0	MIN	0	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	1FC8	8136	-12.1
-12.2	MIN	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1F0F	7951	-12.3
-12.4	MIN	0	0	0	1	1	1	1	0	0	1	0	1	1	0	1	0	1E5A	7770	-12.5
-12.6	MIN	0	0	0	1	1	1	0	1	1	0	1	0	1	0	0	1	1DA9	7593	-12.7
-12.8	MIN	0	0	0	1	1	1	0	0	1	1	1	1	1	1	0	1	1CFD	7421	-12.9
-13.0	MIN	0	0	0	1	1	1	0	0	0	1	0	1	0	1	0	0	1C54	7252	-13.1
-13.2	MIN	0	0	0	1	1	0	1	1	1	0	1	0	1	1	1	1	1BAF	7087	-13.3
-13.4	MIN	0	0	0	1	1	0	1	1	0	0	0	0	1	1	0	1	1B0D	6925	-13.5
-13.6	MIN	0	0	0	1	1	0	1	0	0	1	1	1	0	0	0	0	1A70	6768	-13.7
-13.8	MIN	0	0	0	1	1	0	0	1	1	1	0	1	0	1	1	0	19D6	6614	-13.9
-14.0	MIN	0	0	0	1	1	0	0	1	0	0	1	1	1	1	1	1	193F	6463	-14.1
-14.2	MIN	0	0	0	1	1	0	0	0	1	0	1	0	1	1	0	0	18AC	6316	-14.3
-14.4	MIN	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	181C	6172	-14.5
-14.6	MIN	0	0	0	1	0	1	1	1	1	0	0	1	0	0	0	0	1790	6032	-14.7
-14.8	MIN	0	0	0	1	0	1	1	1	0	0	0	0	0	1	1	0	1706	5894	-14.9
-15.0	MIN	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	0	1680	5760	-15.1
-15.2	MIN	0	0	0	1	0	1	0	1	1	1	1	1	1	1	0	1	15FD	5629	-15.3
-15.4	MIN	0	0	0	1	0	1	0	1	0	1	1	1	1	1	0	1	157D	5501	-15.5
-15.6	MIN	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1500	5376	-15.7
-15.8	MIN	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0	1	1485	5253	-15.9
-16.0	MIN	0	0	0	1	0	1	0	0	0	0	0	0	1	1	1	0	140E	5134	-16.1
-16.2	MIN	0	0	0	1	0	0	1	1	1	0	0	1	1	0	0	1	1399	5017	-16.3
-16.4	MIN	0	0	0	1	0	0	1	1	0	0	1	0	0	1	1	1	1327	4903	-16.5
-16.6	MIN	0	0	0	1	0	0	1	0	1	0	1	1	0	1	1	1	12B7	4791	-16.7
-16.8	MIN	0	0	0	1	0	0	1	0	0	1	0	0	1	0	1	0	124A	4682	-16.9
-17.0	MIN	0	0	0	1	0	0	0	1	1	1	0	1	1	1	1	1	11DF	4575	-17.1
-17.2	MIN	0	0	0	1	0	0	0	1	0	1	1	1	0	1	1	1	1177	4471	-17.3
-17.4	MIN	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	1112	4370	-17.5
-17.6	MIN	0	0	0	1	0	0	0	0	1	0	1	0	1	1	1	0	10AE	4270	-17.7
-17.8	MIN	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	1	104D	4173	-17.9
-18.0	MIN	0	0	0	0	1	1	1	1	1	1	1	0	1	1	1	0	0FEE	4078	-18.1
-18.2	MIN	0	0	0	0	1	1	1	1	1	0	0	1	0	0	0	1	0F91	3985	-18.3
-18.4	MIN	0	0	0	0	1	1	1	1	0	0	1	1	0	1	1	0	0F36	3894	-18.5
-18.6	MIN	0	0	0	0	1	1	1	0	1	1	0	1	1	1	1	0	0EDE	3806	-18.7
-18.8	MIN	0	0	0	0	1	1	1	0	1	0	0	0	0	1	1	1	0E87	3719	-18.9
-19.0	MIN	0	0	0	0	1	1	1	0	0	0	1	1	0	0	1	0	0E32	3634	-19.1
-19.2	MIN	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0DE0	3552	-19.3
-19.4	MIN	0	0	0	0	1	1	0	1	1	0	0	0	1	1	1	1	0D8F	3471	-19.5
-19.6	MIN	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0D40	3392	-19.7
-19.8	MIN	0	0	0	0	1	1	0	0	1	1	1	1	0	0	1	1	0CF3	3315	-19.9
-20.0	MIN	0	0	0	0	1	1	0	0	1	0	1	0	0	1	1	1	0CA7	3239	-20.1
-20.2	MIN	0	0	0	0	1	1	0	0	0	1	0	1	1	1	0	1	0C5D	3165	-20.3
-20.4	MIN	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	1	0C15	3093	-20.5
-20.6	MIN	0	0	0	0	1	0	1	1	1	1	0	0	1	1	1	1	0BCF	3023	-20.7
-20.8	MIN	0	0	0	0	1	0	1	1	1	0	0	0	1	0	1	0	0B8A	2954	-20.9
-21.0	NIN	0	0	0	0	1	0	1	1	0	1	0	0	0	1	1	1	0B47	2887	-21.1
-21.2	MIN	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	1	0B05	2821	-21.3
-21.4	MIN	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	1	0AC5	2757	-21.5
-21.6	MIN	0	0	0	0	1	0	1	0	1	0	0	0	0	1	1	0	0A86	2694	-21.7
-21.8	MIN	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0A49	2633	-21.9
-22.0	MIN	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	1	0A0D	2573	-22.1
-22.2	MIN	0	0	0	0	1	0	0	1	1	1	0	1	0	0	1	0	09D2	2514	-22.3
-22.4	MIN	0	0	0	0	1	0	0	1	1	0	0	1	1	0	0	1	0999	2457	-22.5
-22.6	MIN	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	1	0961	2401	-22.7
-22.8	MIN	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	1	092B	2347	-22.9
-23.0	MIN	0	0	0	0	1	0	0	0	1	1	1	1	0	1	0	1	08F5	2293	-23.1

METER INDICATION (dB)	INPUT DATA (NEGATIVE)																			DATA FULL SCALE 0 dB (dB)
	MAX / MIN	BINNARY																HEX	DEC	
		MSB	2	3	4	5	6	7	8	9	10	11	12	13	14	15	LSB			
-8.0	MAX MIN	1 1	1 1	0 0	0 0	1 1	1 1	0 0	0 1	0 1	1 0	1 1	1 0	0 0	1 0	0 0	0 0	CC74 CDA0	-13196 -12896	-7.9 -8.1
-8.2	MIN	1	1	0	0	1	1	1	0	1	1	0	0	0	1	0	1	CEC5	-12603	-8.3
-8.4	MIN	1	1	0	0	1	1	1	1	1	1	1	0	0	1	0	0	CFE4	-12316	-8.5
-8.6	MIN	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	D0FC	-12036	-8.7
-8.8	MIN	1	1	0	1	0	0	1	0	0	0	0	0	1	1	1	0	D20E	-11762	-8.9
-9.0	MIN	1	1	0	1	0	0	1	1	0	0	0	1	1	0	1	0	D31A	-11494	-9.1
-9.2	MIN	1	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	D420	-11232	-9.3
-9.4	MIN	1	1	0	1	0	1	0	1	0	0	0	1	1	1	1	1	D51F	-10977	-9.5
-9.6	MIN	1	1	0	1	0	1	1	0	0	0	0	1	1	0	0	1	D619	-10727	-9.7
-9.8	MIN	1	1	0	1	0	1	1	1	0	0	0	0	1	1	0	1	D70D	-10483	-9.9
-10.0	MIN	1	1	0	1	0	1	1	1	1	1	1	1	1	1	0	0	D7FC	-10244	-10.1
-10.2	MIN	1	1	0	1	1	0	0	0	1	1	1	0	0	1	0	1	D8E5	-10011	-10.3
-10.4	MIN	1	1	0	1	1	0	0	1	1	1	0	0	1	0	0	1	D9C9	-9783	-10.5
-10.6	MIN	1	1	0	1	1	0	1	0	1	0	1	0	0	1	1	1	DAA7	-9561	-10.7
-10.8	MIN	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	1	DB81	-9343	-10.9
-11.0	MIN	1	1	0	1	1	1	0	0	0	1	0	1	0	1	1	0	DC56	-9130	-11.1
-11.2	MIN	1	1	0	1	1	1	0	1	0	0	1	0	0	1	1	0	DD26	-8922	-11.3
-11.4	MIN	1	1	0	1	1	1	0	1	1	1	1	1	0	0	0	1	DDF1	-8719	-11.5
-11.6	MIN	1	1	0	1	1	1	1	0	1	0	1	1	0	1	1	1	DEB7	-8521	-11.7
-11.8	MIN	1	1	0	1	1	1	1	1	0	1	1	1	1	0	0	1	DF79	-8327	-11.9
-12.0	MIN	1	1	1	0	0	0	0	0	0	0	1	1	0	1	1	1	E037	-8137	-12.1
-12.2	MIN	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	E0F0	-7952	-12.3
-12.4	MIN	1	1	1	0	0	0	0	1	1	0	1	0	0	1	0	1	E1A5	-7771	-12.5
-12.6	MIN	1	1	1	0	0	0	1	0	0	1	0	1	0	1	1	0	E256	-7594	-12.7
-12.8	MIN	1	1	1	0	0	0	1	1	0	0	0	0	0	0	1	0	E302	-7422	-12.9
-13.0	MIN	1	1	1	0	0	0	1	1	1	0	1	0	1	0	1	1	E3AB	-7253	-13.1
-13.2	MIN	1	1	1	0	0	1	0	0	0	1	0	1	0	0	0	0	E450	-7088	-13.3
-13.4	MIN	1	1	1	0	0	1	0	0	1	1	1	1	0	0	1	0	E4F2	-6926	-13.5
-13.6	MIN	1	1	1	0	0	1	0	1	1	0	0	0	1	1	1	1	E58F	-6769	-13.7
-13.8	MIN	1	1	1	0	0	1	1	0	0	0	1	0	1	0	0	1	E629	-6615	-13.9
-14.0	MIN	1	1	1	0	0	1	1	0	1	1	0	0	0	0	0	0	E6C0	-6462	-14.1
-14.2	MIN	1	1	1	0	0	1	1	1	0	1	0	1	0	0	1	1	E753	-6317	-14.3
-14.4	MIN	1	1	1	0	0	1	1	1	1	1	1	0	0	0	1	1	E7E3	-6173	-14.5
-14.6	MIN	1	1	1	0	1	0	0	0	0	1	1	0	1	1	1	1	E86F	-6033	-14.7
-14.8	MIN	1	1	1	0	1	0	0	0	1	1	1	1	1	0	0	1	E8F9	-5895	-14.9
-15.0	MIN	1	1	1	0	1	0	0	1	0	1	1	1	1	1	1	1	E97F	-5761	-15.1
-15.2	MIN	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	0	EA02	-5630	-15.3
-15.4	MIN	1	1	1	0	1	0	1	0	1	0	0	0	0	0	1	0	EA82	-5502	-15.5
-15.6	MIN	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	EAFF	-5377	-15.7
-15.8	MIN	1	1	1	0	1	0	1	1	0	1	1	1	1	0	1	0	EB7A	-5254	-15.9
-16.0	MIN	1	1	1	0	1	0	1	1	1	1	1	1	0	0	0	1	EBF1	-5135	-16.1
-16.2	MIN	1	1	1	0	1	1	0	0	0	1	1	0	0	1	1	0	EC66	-5018	-16.3
-16.4	MIN	1	1	1	0	1	1	0	0	1	1	0	1	1	0	0	0	ECD8	-4904	-16.5
-16.6	MIN	1	1	1	0	1	1	0	1	0	1	0	0	1	0	0	0	ED48	-4792	-16.7
-16.8	MIN	1	1	1	0	1	1	0	1	1	0	1	1	0	1	0	1	EDB5	-4683	-16.9
-17.0	MIN	1	1	1	0	1	1	1	0	0	0	1	0	0	0	0	0	EE20	-4576	-17.1
-17.2	MIN	1	1	1	0	1	1	1	0	1	0	0	0	1	0	0	0	EE88	-4472	-17.3
-17.4	MIN	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	1	EEED	-4371	-17.5
-17.6	MIN	1	1	1	0	1	1	1	1	0	1	0	1	0	0	0	1	EF51	-4271	-17.7
-17.8	MIN	1	1	1	0	1	1	1	1	1	0	1	1	0	0	1	0	EFB2	-4174	-17.9
-18.0	MIN	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	1	F011	-4079	-18.1
-18.2	MIN	1	1	1	1	0	0	0	0	0	1	1	0	1	1	1	0	F06E	-3986	-18.3
-18.4	MIN	1	1	1	1	0	0	0	0	1	1	0	0	1	0	0	1	F0C9	-3895	-18.5
-18.6	MIN	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	1	F121	-3807	-18.7
-18.8	MIN	1	1	1	1	0	0	0	1	0	1	1	1	1	0	0	0	F178	-3720	-18.9
-19.0	MIN	1	1	1	1	0	0	0	1	1	1	0	0	1	1	0	1	F1CD	-3635	-19.1
-19.2	MIN	1	1	1	1	0	0	1	0	0	0	0	1	1	1	1	1	F21F	-3553	-19.3
-19.4	MIN	1	1	1	1	0	0	1	0	0	1	1	1	0	0	0	0	F270	-3472	-19.5
-19.6	MIN	1	1	1	1	0	0	1	0	1	0	1	1	1	1	1	1	F2BF	-3393	-19.7
-19.8	MIN	1	1	1	1	0	0	1	1	0	0	0	0	1	1	0	0	F30C	-3316	-19.9
-20.0	MIN	1	1	1	1	0	0	1	1	0	1	0	1	1	0	0	0	F358	-3240	-20.1
-20.2	MIN	1	1	1	1	0	0	1	1	1	0	1	0	0	0	1	0	F3A2	-3166	-20.3
-20.4	MIN	1	1	1	1	0	0	1	1	1	1	1	0	1	0	1	0	F3EA	-3094	-20.5
-20.6	MIN	1	1	1	1	0	1	0	0	0	0	1	1	0	0	0	0	F430	-3024	-20.7
-20.8	MIN	1	1	1	1	0	1	0	0	0	1	1	1	0	1	0	1	F475	-2955	-20.9
-21.0	NIN	1	1	1	1	0	1	0	0	1	0	1	1	1	0	0	0	F4B8	-2888	-21.1
-21.2	MIN	1	1	1	1	0	1	0	0	1	1	1	1	1	0	1	0	F4FA	-2822	-21.3
-21.4	MIN	1	1	1	1	0	1	0	1	0	0	1	1	1	0	1	0	F53A	-2758	-21.5
-21.6	MIN	1	1	1	1	0	1	0	1	0	1	1	1	1	0	0	1	F579	-2695	-21.7
-21.8	MIN	1	1	1	1	0	1	0	1	1	0	1	1	0	1	1	0	F5B6	-2634	-21.9
-22.0	MIN	1	1	1	1	0	1	0	1	1	1	1	1	0	0	1	0	F5F2	-2574	-22.1
-22.2	MIN	1	1	1	1	0	1	1	0	0	0	1	0	1	1	0	1	F62D	-2515	-22.3
-22.4	MIN	1	1	1	1	0	1	1	0	0	1	1	0	0	1	1	0	F666	-2458	-22.5
-22.6	MIN	1	1	1	1	0	1	1	0	1	0	0	1	1	1	1	0	F69E	-2402	-22.7
-22.8	MIN	1	1	1	1	0	1	1	0	1	1	0	1	0	1	0	0	F6D4	-2348	-22.9
-23.0	MIN	1	1	1	1	0	1	1	1	0	0	0	0	1	0	1	0	F70A	-2294	-23.1

SECTION B
SCHEMATIC AND CIRCUIT BOARD DIAGRAMS

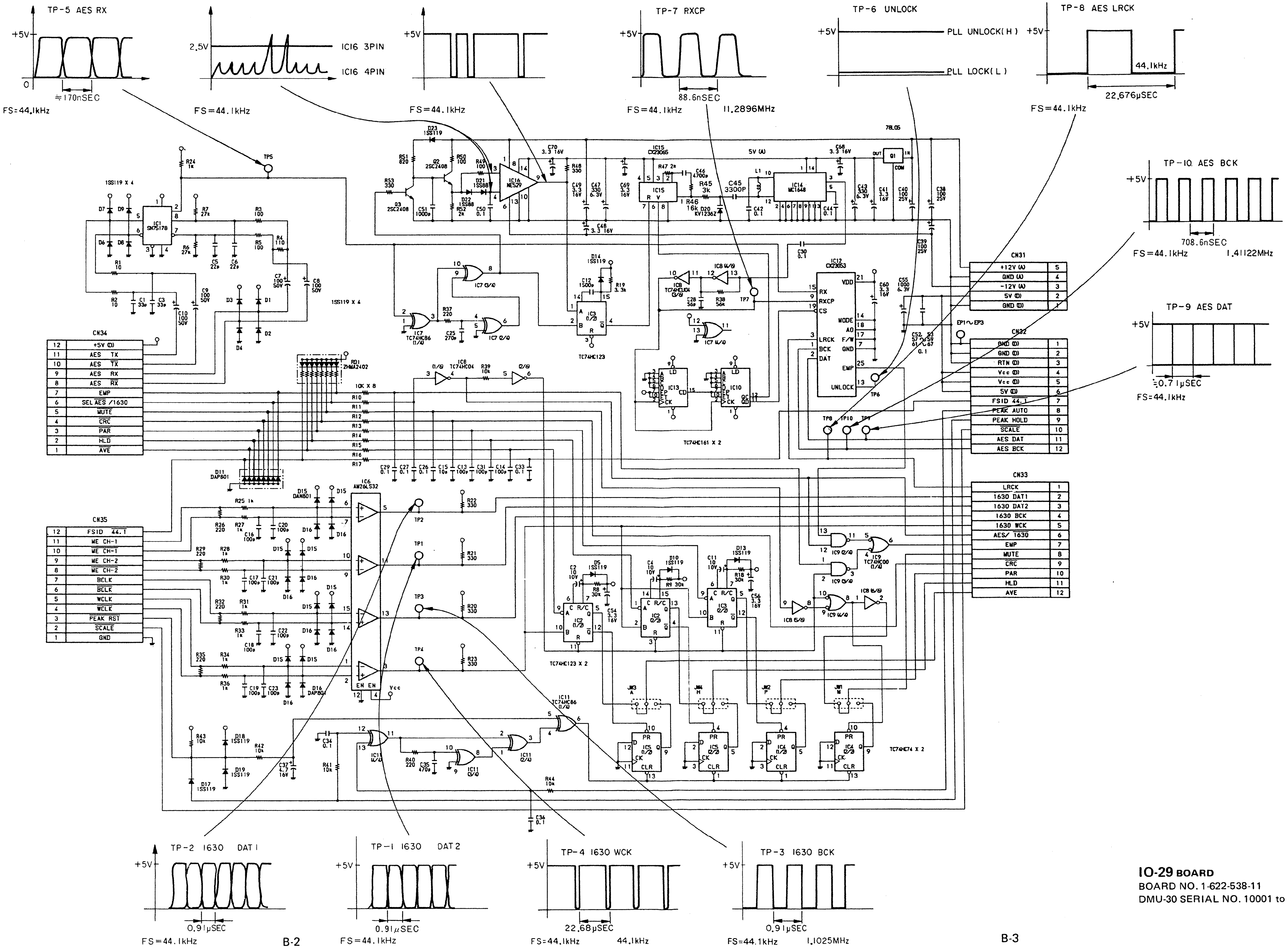
IO-29 BOARD (1-622-538-11) Serial No. 10001 to 10300

Component Side


IO-29
1-622-538-11
CN-31
CN-32
CN-33
CN-34
IC5
IC6
IC7
IC12
IC15
IC16
JW1
JW2
JW3
JW4
TP1
TP2
TP3
TP4
C10
C17
C18
C19
C20
C21
C22
C23
C25
C27
C29
C33
C35
C36
C46
C48
C49
C57
R1
R2
R3
R10
R17
R36
R37
R38
R42
R43
R44
R47
R53
D5
D15
D16
D17
D18
D19
SONY
MADE IN JAPAN
LOT NO.

▨ SOLDER SIDE PATTERN 1-622-538-11

□ COMPONENT SIDE PATTERN 1-622-538-11

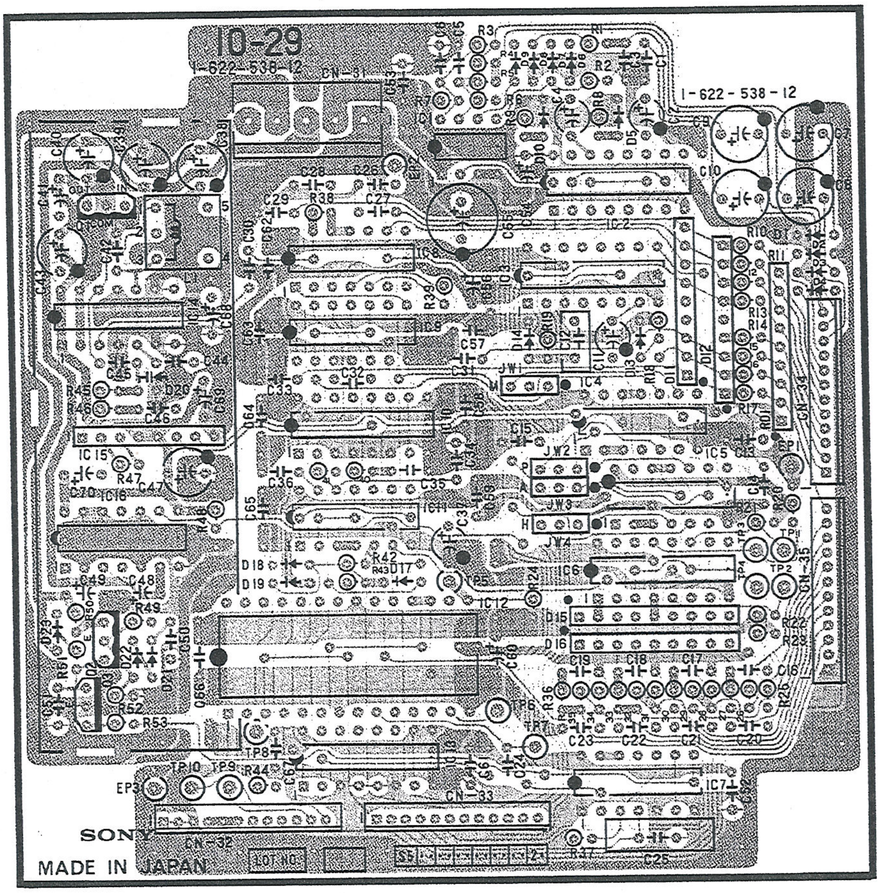

TP-5 AES RX
+5V
0
≒170nSEC
FS=44.1kHz
2.5V
IC16 3PIN
IC16 4PIN
FS=44.1kHz
+5V
FS=44.1kHz
TP-7 RXCP
+5V
88.6nSEC
FS=44.1kHz
11.2896MHz
TP-6 UNLOCK
+5V
PLL UNLOCK(H)
PLL LOCK(L)
TP-8 AES LRCK
+5V
44.1kHz
22.676μSEC
FS=44.1kHz
TP-10 AES BCK
+5V
708.6nSEC
FS=44.1kHz
1.41122MHz
TP-9 AES DAT
+5V
≒0.71μSEC
FS=44.1kHz
IC1 SN75178
IC16 NE529
IC15 CX23065
IC14 MC1648
IC12 CX23053
IC7 TC74HC86
IC8 TC74HC04
IC3 TC74HC123
IC13 IC10 TC74HC161 X 2
IC6 AM26LS32
IC2 IC3 TC74HC123 X 2
IC9 TC74HC00
IC11 TC74HC86
IC5 IC4 TC74HC74 X 2
RB1 ZHMA2402
D11 DAP801
Q1 78L05
Q2 2SC2408
Q3 2SC2408
CN34
12 +5V (D)
11 AES TX
10 AES TX
9 AES RX
8 AES RX
7 EMP
6 SEL AES /1630
5 MUTE
4 CRC
3 PAR
2 HLD
1 AVE
CN35
12 FSID 44.1
11 ME CH-1
10 ME CH-1
9 ME CH-2
8 ME CH-2
7 BCLK
6 BCLK
5 WCLK
4 WCLK
3 PEAK RST
2 SCALE
1 GND
CN31
+12V (A) 5
GND (A) 4
-12V (A) 3
5V (D) 2
GND (D) 1
CN32
GND (D) 1
GND (D) 2
RTN (D) 3
Vcc (D) 4
Vcc (D) 5
5V (D) 6
FSID 44.1 7
PEAK AUTO 8
PEAK HOLD 9
SCALE 10
AES DAT 11
AES BCK 12
CN33
LRCK 1
1630 DAT1 2
1630 DAT2 3
1630 BCK 4
1630 WCK 5
AES/ 1630 6
EMP 7
MUTE 8
CRC 9
PAR 10
HLD 11
AVE 12
TP-2 1630 DAT1
+5V
0.91μSEC
FS=44.1kHz
TP-1 1630 DAT2
+5V
0.91μSEC
FS=44.1kHz
TP-4 1630 WCK
+5V
22.68μSEC
FS=44.1kHz
44.1kHz
TP-3 1630 BCK
+5V
0.91μSEC
FS=44.1kHz
1.1025MHz

IO-29 BOARD
BOARD NO. 1-622-538-11
DMU-30 SERIAL NO. 10001 to 10300

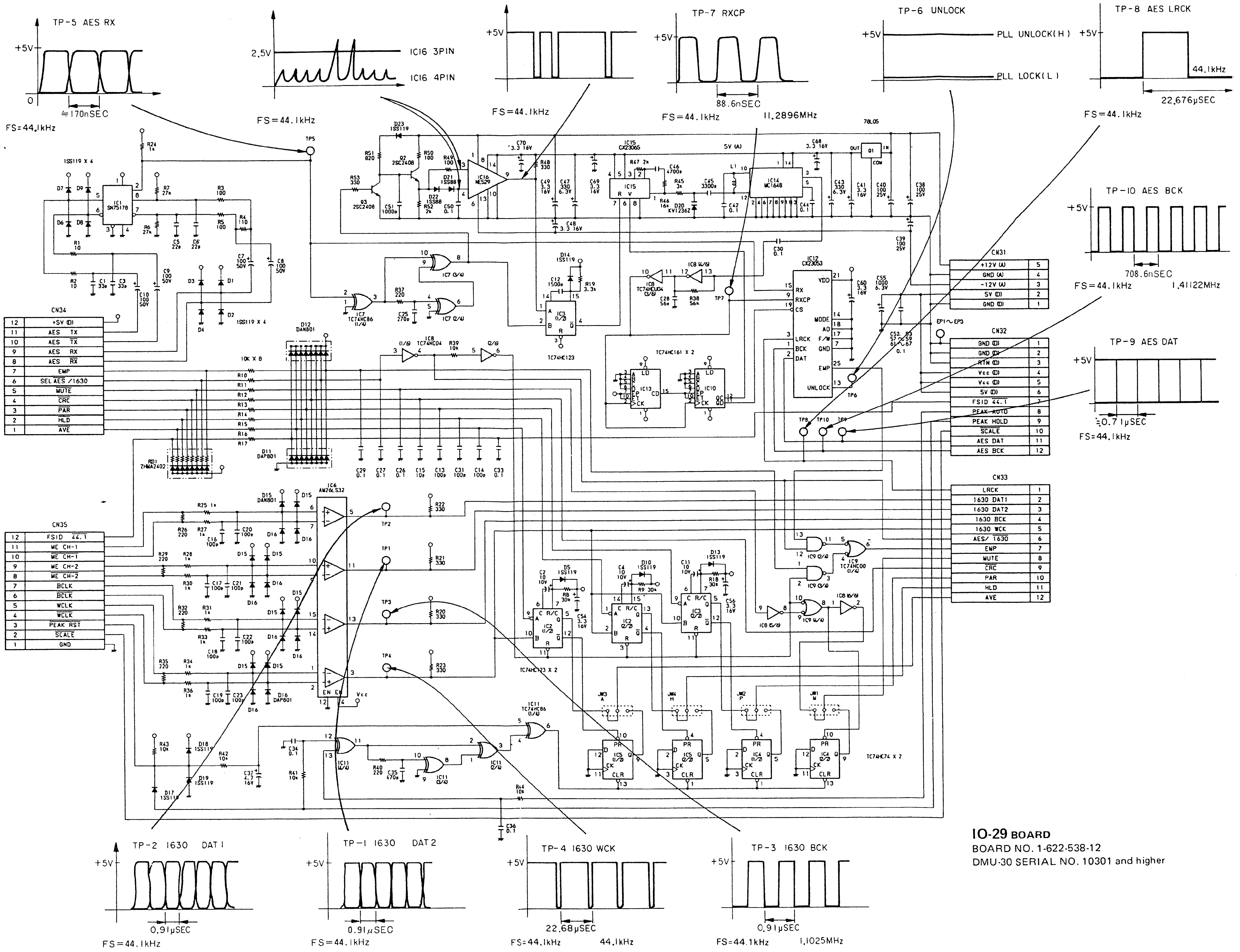
IO-29 BOARD (1-622-538-12)

Serial No. 10301 and higher

Component Side


IO-29
1-622-538-12
1-622-538-12
CN-31
CN-32
CN-33
CN-34
CN-35
IC2
IC4
IC5
IC6
IC7
IC8
IC11
IC12
IC15
IC16
JW1
JW2
JW3
JW4
TP1
TP2
TP4
TP5
TP6
TP7
TP8
TP9
TP10
EP1
EP3
C17
C18
C19
C20
C21
C22
C23
C25
C27
C28
C29
C31
C32
C33
C35
C36
C44
C46
C47
C48
C49
C57
C69
C70
D14
D15
D16
D17
D18
D19
D20
R36
R37
R38
R42
R44
R47
R48
R49
R52
R53
SONY
MADE IN JAPAN
LOT NO.

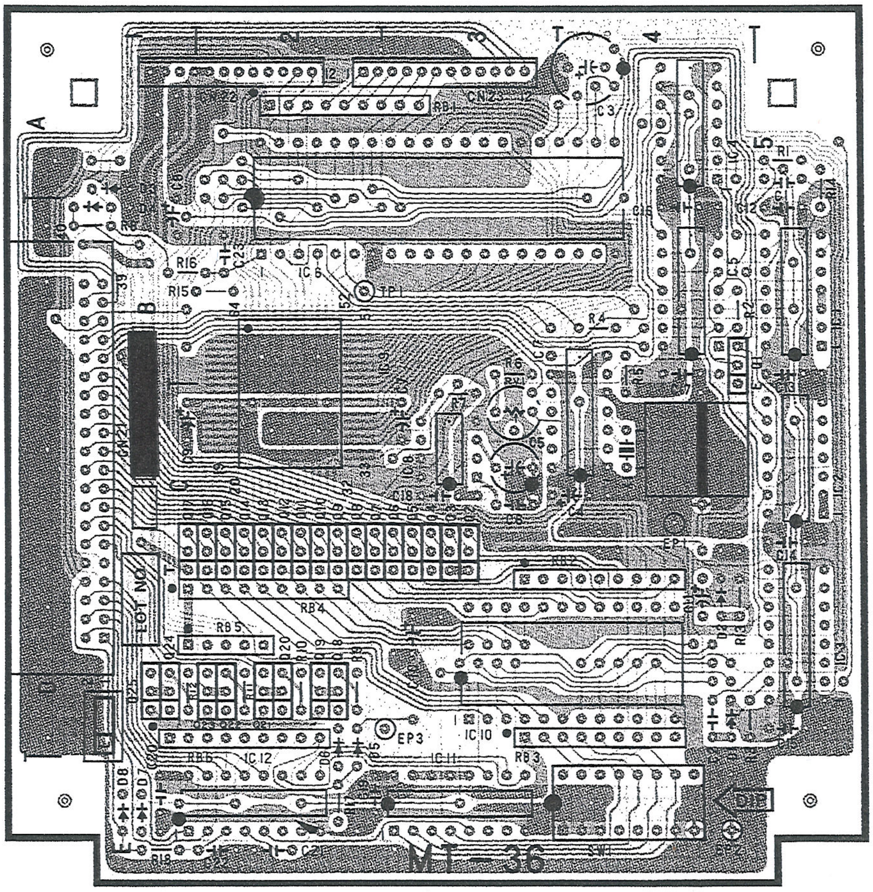
▨ SOLDER SIDE PATTERN 1-622-538-12


TP-5 AES RX
+5V
0
≒170nSEC
FS=44.1kHz
2.5V
IC16 3PIN
IC16 4PIN
FS=44.1kHz
+5V
FS=44.1kHz
TP-7 RXCP
+5V
88.6nSEC
FS=44.1kHz
11.2896MHz
TP-6 UNLOCK
+5V
PLL UNLOCK(H)
PLL LOCK(L)
TP-8 AES LRCK
+5V
44.1kHz
22,676μSEC
FS=44.1kHz
TP-10 AES BCK
+5V
708.6nSEC
FS=44.1kHz
1.41122MHz
TP-9 AES DAT
+5V
≒0.71μSEC
FS=44.1kHz
IC1 SN75178
IC16 NE529
IC15 CX23065
IC14 MC1648
IC12 CX23053
78L05
IC7 TC74HC86
IC8 TC74HC04
IC3 TC74HC123
IC13 IC10 TC74HC161 X 2
IC6 AM26LS32
IC2 TC74HC123 X 2
IC11 TC74HC86
IC9 TC74HC00
IC5 IC4 TC74HC74 X 2
CN31
+12V (A) 5
GND (A) 4
-12V (A) 3
5V (D) 2
GND (D) 1
CN32
GND (D) 1
GND (D) 2
RTN (D) 3
Vcc (D) 4
Vcc (D) 5
5V (D) 6
FSID 44.1 7
PEAK AUTO 8
PEAK HOLD 9
SCALE 10
AES DAT 11
AES BCK 12
CN33
LRCK 1
1630 DAT1 2
1630 DAT2 3
1630 BCK 4
1630 WCK 5
AES/1630 6
EMP 7
MUTE 8
CRC 9
PAR 10
HLD 11
AVE 12
CN34
12 +5V (D)
11 AES TX
10 AES TX
9 AES RX
8 AES RX
7 EMP
6 SEL AES/1630
5 MUTE
4 CRC
3 PAR
2 HLD
1 AVE
CN35
12 FSID 44.1
11 ME CH-1
10 ME CH-1
9 ME CH-2
8 ME CH-2
7 BCLK
6 BCLK
5 WCLK
4 WCLK
3 PEAK RST
2 SCALE
1 GND
TP-2 1630 DAT1
+5V
0.91μSEC
FS=44.1kHz
TP-1 1630 DAT2
+5V
0.91μSEC
FS=44.1kHz
TP-4 1630 WCK
+5V
22.68μSEC
FS=44.1kHz
44.1kHz
TP-3 1630 BCK
+5V
0.91μSEC
FS=44.1kHz
1.1025MHz

IO-29 BOARD
BOARD NO. 1-622-538-12
DMU-30 SERIAL NO. 10301 and higher

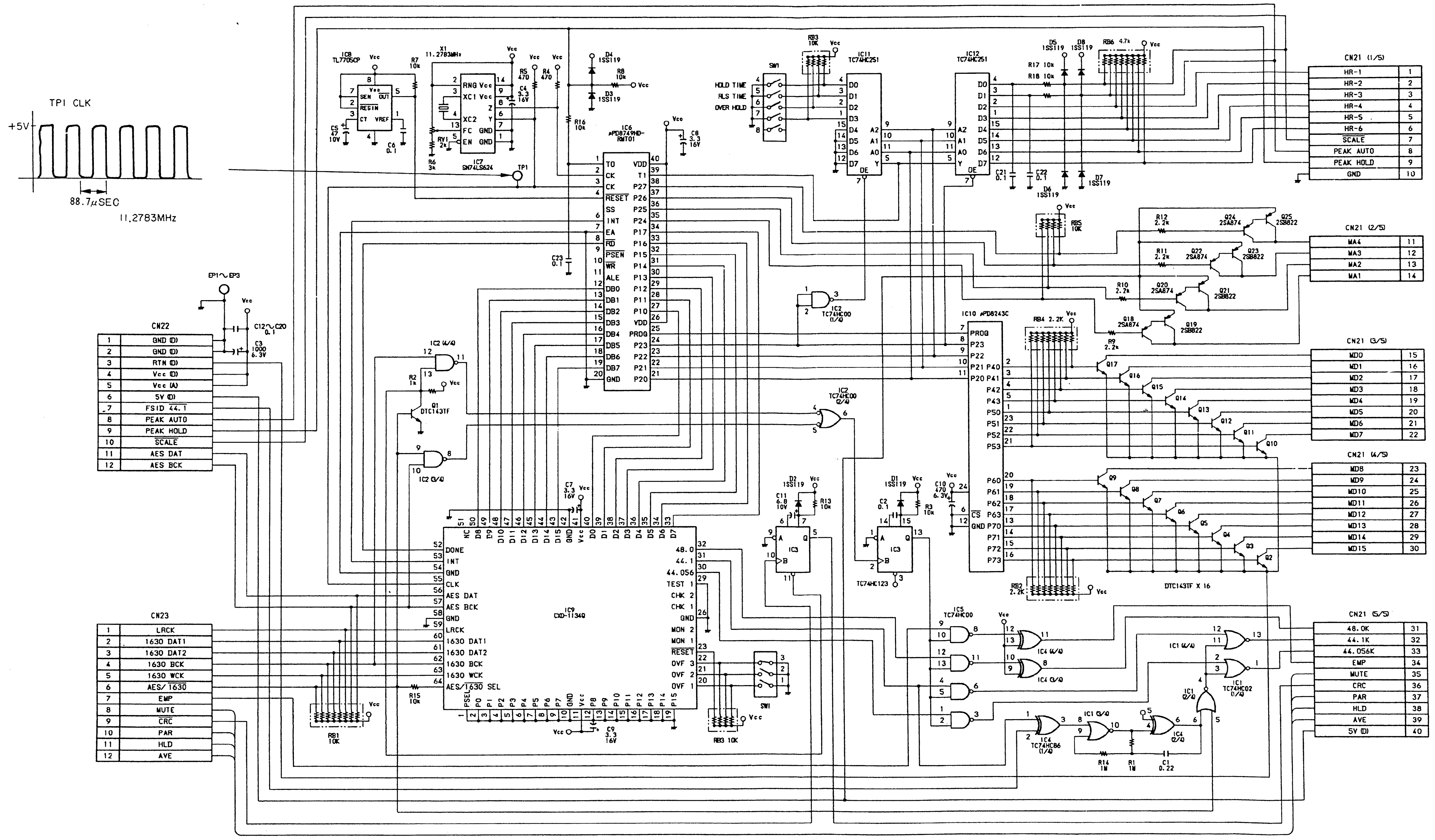
MT-36 BOARD (1-622-539-11)

Component Side


A
B
C
1
2
3
4
5
CN23
RB1
RB2
RB3
RB4
RB5
RB6
IC6
IC10
IC11
IC12
TP1
EP1
EP3
R1
R2
R4
R6
R7
R14
R15
R16
R18
RV1
C3
C5
D7
D8
LOT No.
SW1
DIP
MT－36

▨ SOLDER SIDE PATTERN 1-622-539-11

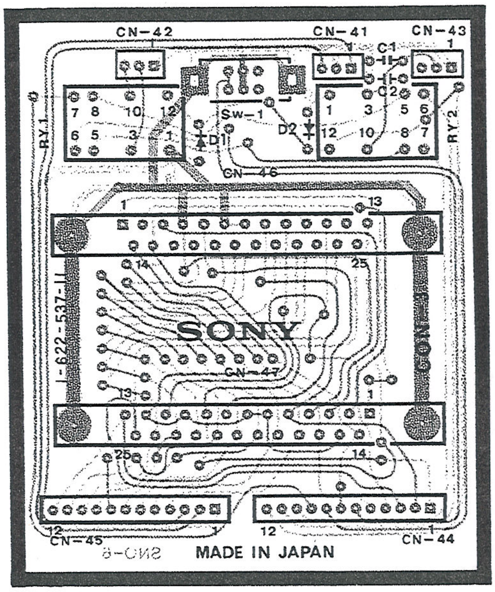
▨ COMPONENT SIDE PATTERN 1-622-539-11


TP1 CLK
+5V
88.7μSEC
11.2783MHz
EP1~EP3
CN22
1 GND (D)
2 GND (D)
3 RTN (D)
4 Vcc (D)
5 Vcc (A)
6 5V (D)
7 FSID 44.1
8 PEAK AUTO
9 PEAK HOLD
10 SCALE
11 AES DAT
12 AES BCK
CN23
1 LRCK
2 1630 DAT1
3 1630 DAT2
4 1630 BCK
5 1630 WCK
6 AES/1630
7 EMP
8 MUTE
9 CRC
10 PAR
11 HLD
12 AVE
IC8 TL7705CP
X1 11.2783MHz
IC7 SN74LS624
IC6 μPD8749HD-RMT01
TP1
IC2 TC74HC00
Q1 DTC143TF
IC9 CXD-1134Q
RB1 10K
RB3 10K
SW1
HOLD TIME
RLS TIME
OVER HOLD
IC11 TC74HC251
IC12 TC74HC251
IC10 μPD8243C
IC3 TC74HC123
IC5 TC74HC00
IC4 TC74HC86
IC1 TC74HC02
RB4 2.2K
RB2 2.2K
RB5 10K
RB6 4.7k
DTC143TF X 16
Q18 2SA874
Q19 2SB822
Q20 2SA874
Q21 2SB822
Q22 2SA874
Q23 2SB822
Q24 2SA874
Q25 2SB822
R14 1M
R1 1M
C1 0.22
CN21 (1/5)
HR-1 1
HR-2 2
HR-3 3
HR-4 4
HR-5 5
HR-6 6
SCALE 7
PEAK AUTO 8
PEAK HOLD 9
GND 10
CN21 (2/5)
MA4 11
MA3 12
MA2 13
MA1 14
CN21 (3/5)
MD0 15
MD1 16
MD2 17
MD3 18
MD4 19
MD5 20
MD6 21
MD7 22
CN21 (4/5)
MD8 23
MD9 24
MD10 25
MD11 26
MD12 27
MD13 28
MD14 29
MD15 30
CN21 (5/5)
48.0K 31
44.1K 32
44.056K 33
EMP 34
MUTE 35
CRC 36
PAR 37
HLD 38
AVE 39
5V (D) 40

MT-36 BOARD
BOARD NO. 1-622-539-11
DMU-30 SERIAL NO. 10001 and higher

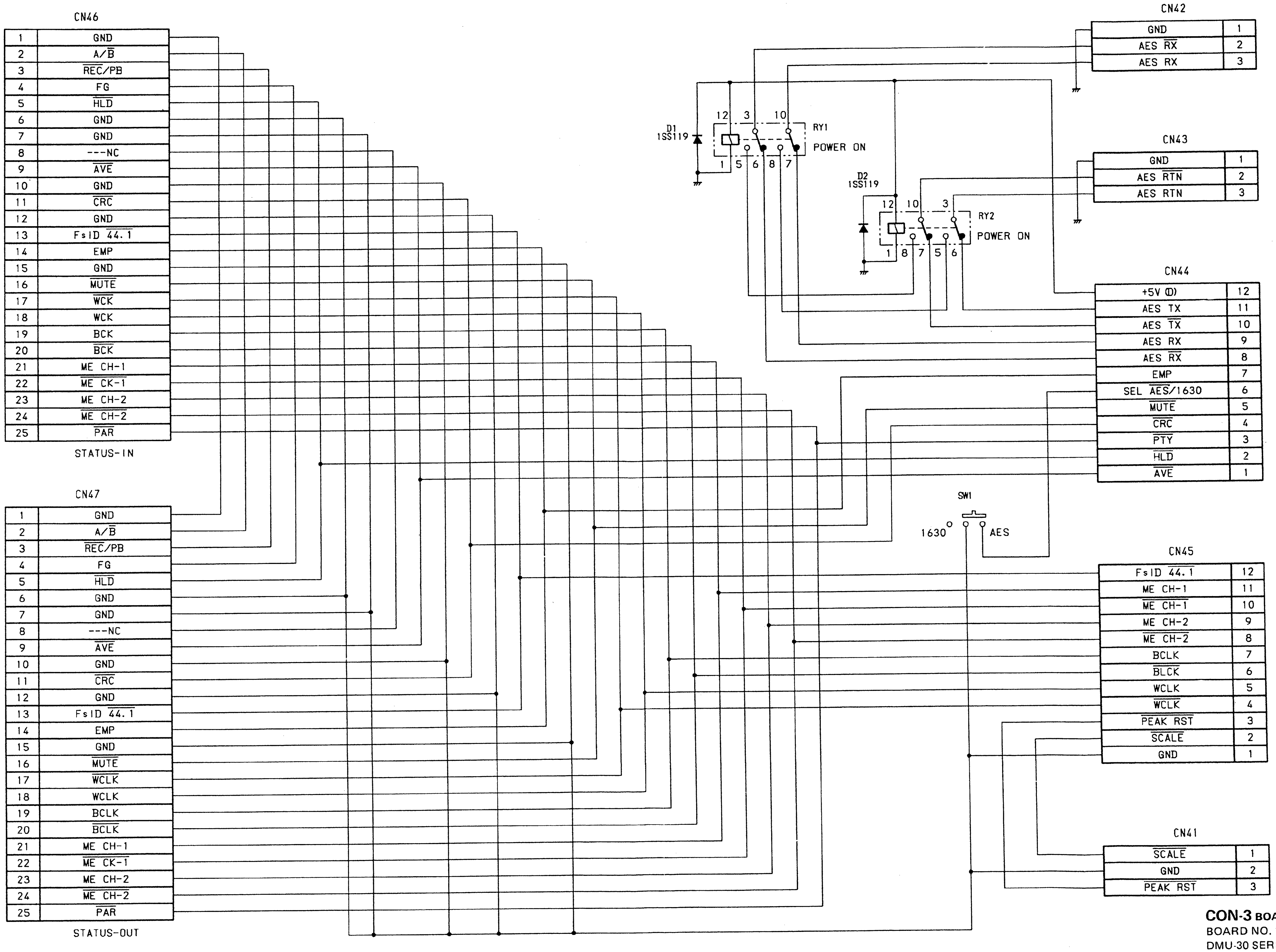
CON-3 BOARD (1-622-537-11)

Component Side


CN-42
CN-41
CN-43
C1
C2
RY 1
RY 2
SW-1
D1
D2
CN-46
1
13
14
25
SONY
CN-47
CON-3
1-622-537-11
12
CN-45
CN-44
MADE IN JAPAN

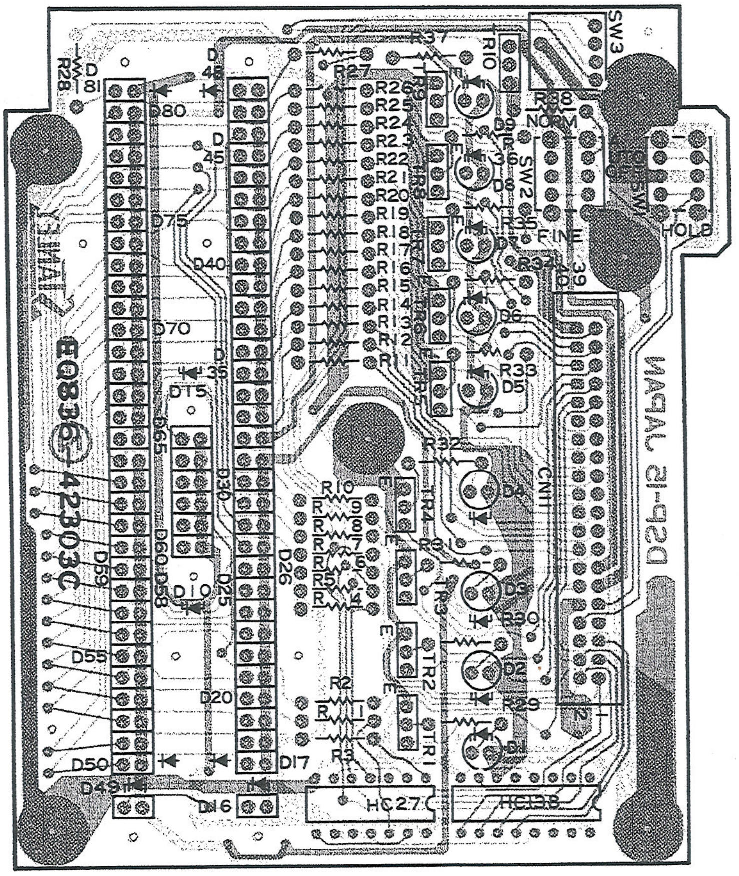
▨ SOLDER SIDE PATTERN 1-622-537-11

▨ COMPONENT SIDE PATTERN 1-622-537-11

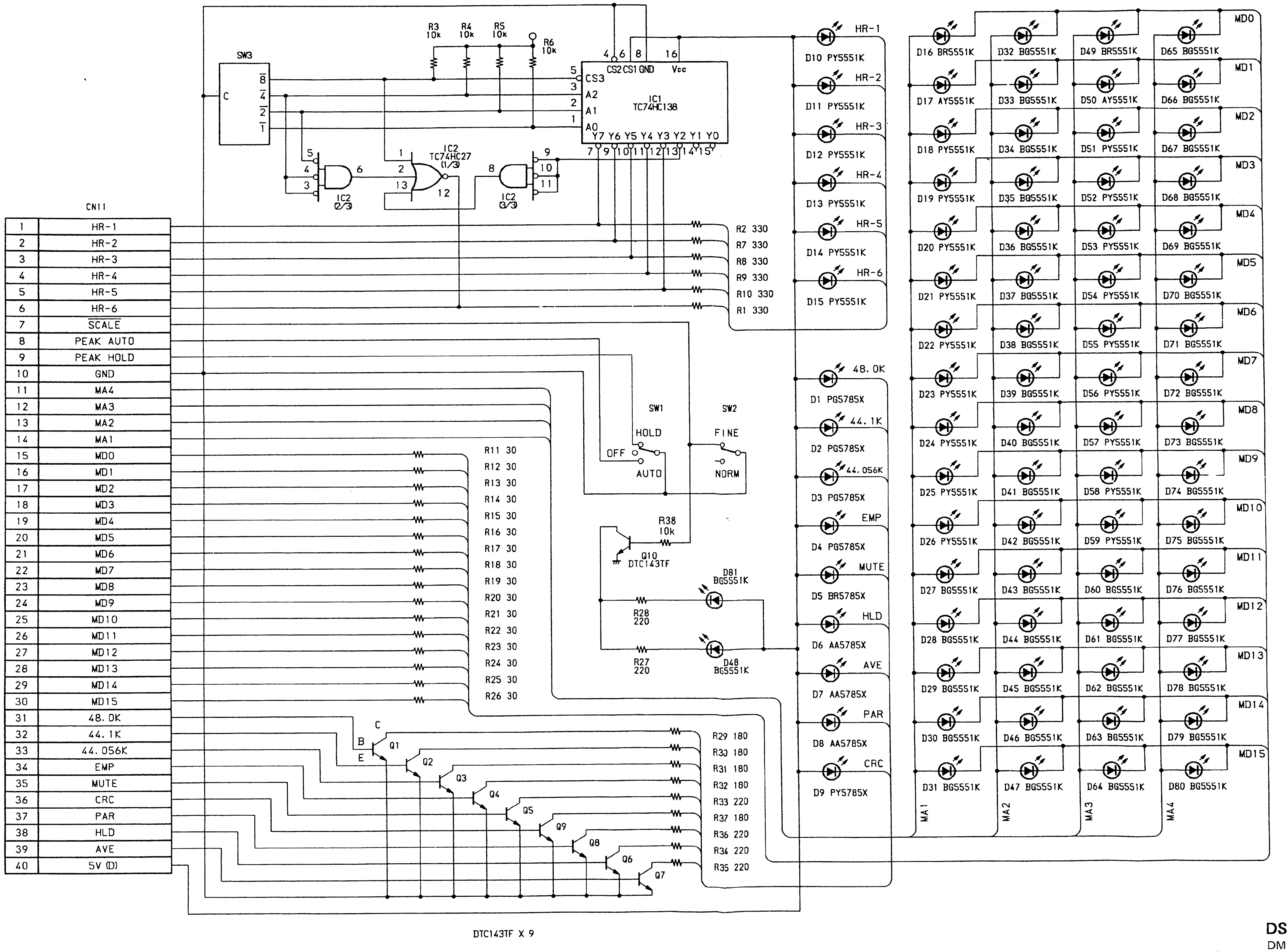

CN46
1 GND
2 A/B
3 REC/PB
4 FG
5 HLD
6 GND
7 GND
8 ---NC
9 AVE
10 GND
11 CRC
12 GND
13 FsID 44.1
14 EMP
15 GND
16 MUTE
17 WCK
18 WCK
19 BCK
20 BCK
21 ME CH-1
22 ME CK-1
23 ME CH-2
24 ME CH-2
25 PAR
STATUS-IN
CN47
1 GND
2 A/B
3 REC/PB
4 FG
5 HLD
6 GND
7 GND
8 ---NC
9 AVE
10 GND
11 CRC
12 GND
13 FsID 44.1
14 EMP
15 GND
16 MUTE
17 WCLK
18 WCLK
19 BCLK
20 BCLK
21 ME CH-1
22 ME CK-1
23 ME CH-2
24 ME CH-2
25 PAR
STATUS-OUT
D1
1SS119
12 3 10
RY1
POWER ON
1 5 6 8 7
D2
1SS119
12 10 3
RY2
POWER ON
1 8 7 5 6
CN42
GND 1
AES RX 2
AES RX 3
CN43
GND 1
AES RTN 2
AES RTN 3
CN44
+5V (D) 12
AES TX 11
AES TX 10
AES RX 9
AES RX 8
EMP 7
SEL AES/1630 6
MUTE 5
CRC 4
PTY 3
HLD 2
AVE 1
SW1
1630
AES
CN45
FsID 44.1 12
ME CH-1 11
ME CH-1 10
ME CH-2 9
ME CH-2 8
BCLK 7
BLCK 6
WCLK 5
WCLK 4
PEAK RST 3
SCALE 2
GND 1
CN41
SCALE 1
GND 2
PEAK RST 3

CON-3 BOARD
BOARD NO. 1-662-537-11
DMU-30 SERIAL NO. 10001 and higher

DSP-15 BOARD
Component Side


SW3
R37
R10
R38
NORM
SW2
FINE
HOLD
SW1
OFF
R27
R26
R25
R24
R23
R22
R21
R20
R19
R18
R17
R16
R15
R14
R13
R12
R11
D9
R36
D8
R35
D7
R34
D6
R33
D5
R32
D4
D3
R30
D2
R29
D1
TR1
TR2
TR3
TR4
HC27
HC138
CN1
DSP-15 JAPAN
R28
D81
D80
D45
D75
D40
D70
D35
D15
D65
D30
D60
D59
D58
D10
D25
D26
D55
D20
D50
D49
D17
D16
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
EQ836-42303C

■ SOLDER SIDE PATTERN
▨ COMPONENT SIDE PATTERN


SW3
C
8
4
2
1
R3 10k
R4 10k
R5 10k
R6 10k
IC1 TC74HC138
CS3
A2
A1
A0
CS2 CS1 GND
Vcc
Y7 Y6 Y5 Y4 Y3 Y2 Y1 Y0
IC2 TC74HC27 (1/3)
IC2 (2/3)
IC2 (3/3)
CN11
1 HR-1
2 HR-2
3 HR-3
4 HR-4
5 HR-5
6 HR-6
7 SCALE
8 PEAK AUTO
9 PEAK HOLD
10 GND
11 MA4
12 MA3
13 MA2
14 MA1
15 MD0
16 MD1
17 MD2
18 MD3
19 MD4
20 MD5
21 MD6
22 MD7
23 MD8
24 MD9
25 MD10
26 MD11
27 MD12
28 MD13
29 MD14
30 MD15
31 48.0K
32 44.1K
33 44.056K
34 EMP
35 MUTE
36 CRC
37 PAR
38 HLD
39 AVE
40 5V (D)
R2 330
R7 330
R8 330
R9 330
R10 330
R1 330
R11 30
R12 30
R13 30
R14 30
R15 30
R16 30
R17 30
R18 30
R19 30
R20 30
R21 30
R22 30
R23 30
R24 30
R25 30
R26 30
SW1
HOLD
OFF
AUTO
SW2
FINE
NORM
R38 10k
Q10 DTC143TF
D81 BG5551K
R28 220
R27 220
D48 BG5551K
C
B
E
Q1
Q2
Q3
Q4
Q5
Q9
Q8
Q6
Q7
R29 180
R30 180
R31 180
R32 180
R33 220
R37 180
R36 220
R34 220
R35 220
DTC143TF X 9
HR-1
D10 PY5551K
HR-2
D11 PY5551K
HR-3
D12 PY5551K
HR-4
D13 PY5551K
HR-5
D14 PY5551K
HR-6
D15 PY5551K
48.0K
D1 PG5785X
44.1K
D2 PG5785X
44.056K
D3 PG5785X
EMP
D4 PG5785X
MUTE
D5 BR5785X
HLD
D6 AA5785X
AVE
D7 AA5785X
PAR
D8 AA5785X
CRC
D9 PY5785X
D16 BR5551K
D32 BG5551K
D49 BR5551K
D65 BG5551K
MD0
D17 AY5551K
D33 BG5551K
D50 AY5551K
D66 BG5551K
MD1
D18 PY5551K
D34 BG5551K
D51 PY5551K
D67 BG5551K
MD2
D19 PY5551K
D35 BG5551K
D52 PY5551K
D68 BG5551K
MD3
D20 PY5551K
D36 BG5551K
D53 PY5551K
D69 BG5551K
MD4
D21 PY5551K
D37 BG5551K
D54 PY5551K
D70 BG5551K
MD5
D22 PY5551K
D38 BG5551K
D55 PY5551K
D71 BG5551K
MD6
D23 PY5551K
D39 BG5551K
D56 PY5551K
D72 BG5551K
MD7
D24 PY5551K
D40 BG5551K
D57 PY5551K
D73 BG5551K
MD8
D25 PY5551K
D41 BG5551K
D58 PY5551K
D74 BG5551K
MD9
D26 PY5551K
D42 BG5551K
D59 PY5551K
D75 BG5551K
MD10
D27 BG5551K
D43 BG5551K
D60 BG5551K
D76 BG5551K
MD11
D28 BG5551K
D44 BG5551K
D61 BG5551K
D77 BG5551K
MD12
D29 BG5551K
D45 BG5551K
D62 BG5551K
D78 BG5551K
MD13
D30 BG5551K
D46 BG5551K
D63 BG5551K
D79 BG5551K
MD14
D31 BG5551K
D47 BG5551K
D64 BG5551K
D80 BG5551K
MD15
MA1
MA2
MA3
MA4

DSP-15 BOARD
DMU-30 SERIAL NO. 10001 and higher

SECTION C
REPLACEABLE PARTS

PARTS ORDERING INFORMATION

Standardization of Parts
Repair parts supplied from Sony Parts Center may not be always identical with the part which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".
This manual's exploded views and electrical parts list are indicating the parts numbers of the "standardized genuine parts at present".

Parts marked with S in the column of SP
These parts are normally stocked as replaceable parts.

Parts marked with O in the column of SP
Orders for these parts will be processed, but allow for additional delivery time.

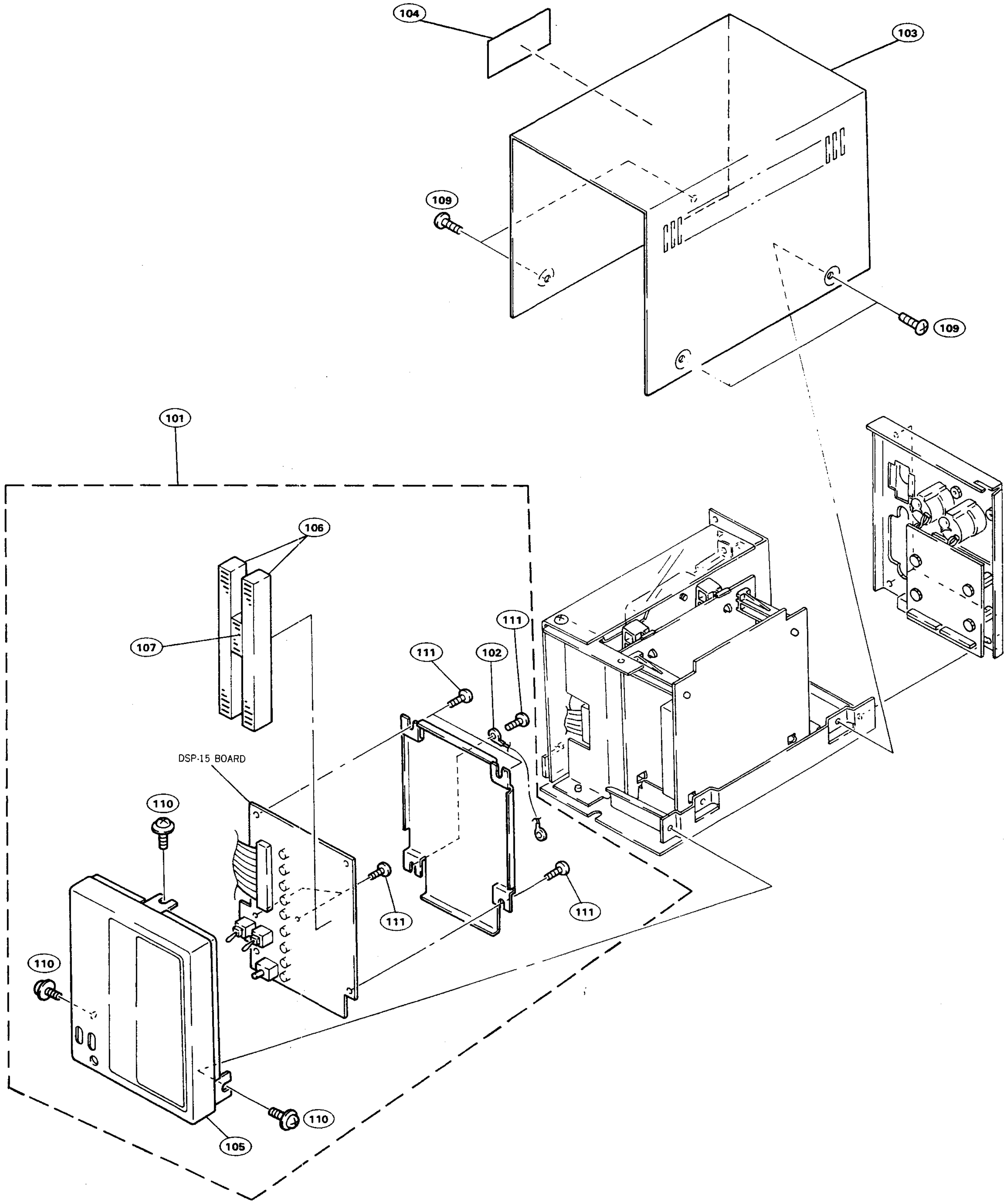
Parts without Part No.
These parts are not stocked because they are seldom required for routine service.

> The components marked with ⚠ are critical to safe operation.
> These components must be replaced with the same ones as described on the Parts List.

C-1. EXPLODED VIEW AND PARTS LIST

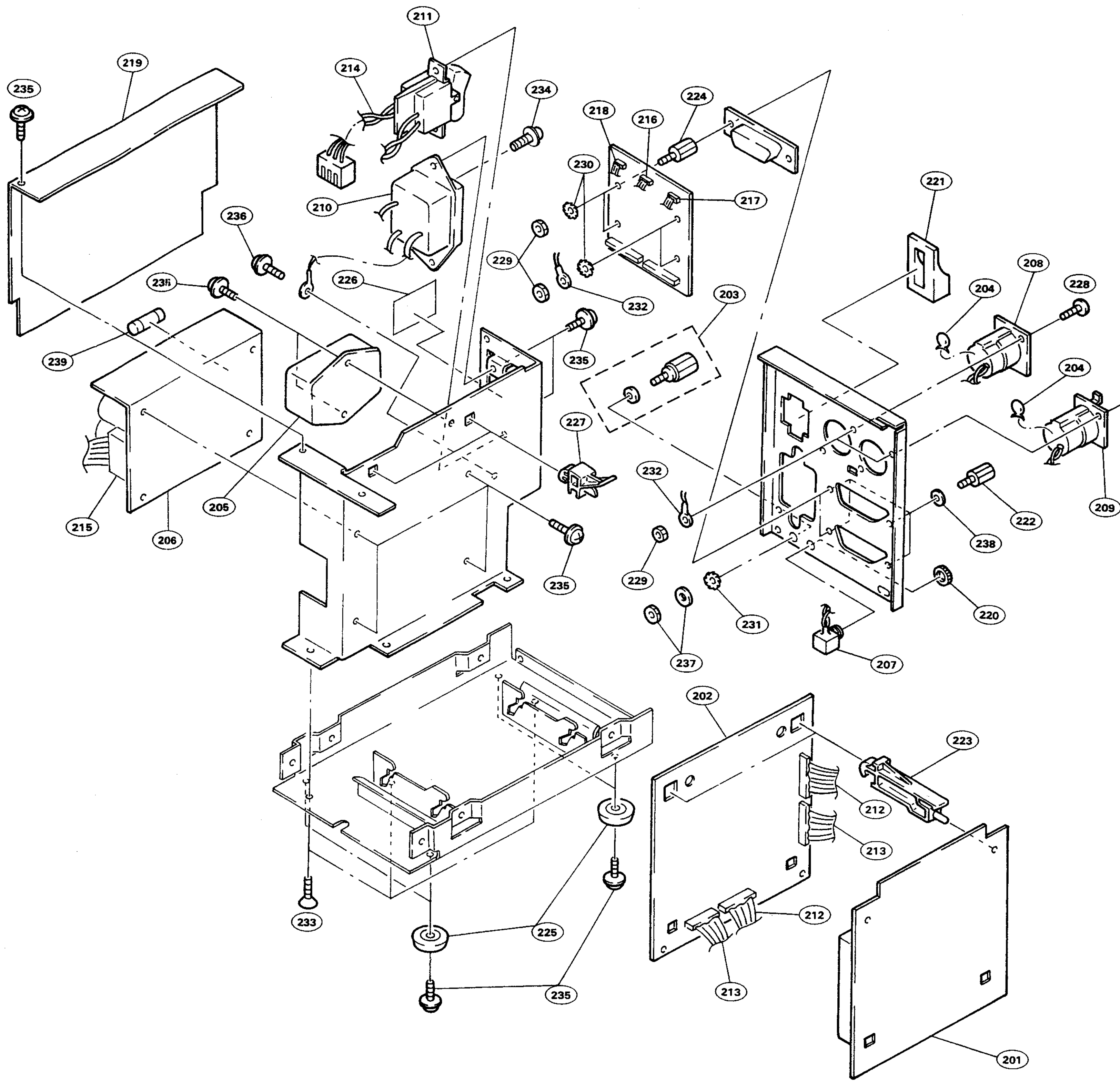
OVERALL ASSY

Index No.	SP	Part No.	Description
101	o	1-464-835-11	PANEL UNIT, INDICATION
102	o	1-559-406-21	WIRE, EARTH (WITH TERMINAL)
103	o	2-125-005-01	LID, UPPER
104	s	3-703-043-21	LABEL, CAUTION, MAIN
105	o	3-707-342-01	CASE, PANEL
106	o	3-707-344-01	HOUSING(1)
107	o	3-707-345-01	HOUSING(2)
108	s	7-682-547-09	SCREW +B3x6
109	s	7-682-560-09	SCREW +B4x6
110	s	7-682-647-09	SCREW +PWH3x6
111	s	7-685-646-79	SCREW +P3x8



MAIN ASSEMBLIES

Index No.	SP	Part No.	Description
201	o	A-7850-513-A	COMPLETE PCB, MT-36
202	o	A-7850-515-A	CIMPLETE PCB, IO-29
203	o	X-4801-204-0	TERMINAL ASSY
204	s	1-102-963-00	CAP, CERAMIC 33PF 5% 50V
⚠205	s	1-235-273-00	FILTER, AC LINE NOISE
⚠206	s	1-413-308-11	REGULATOR, SWITCHING
207	s	1-507-743-00	JACK, STEREO MINIATURE
208	s	1-509-176-51	CONNECTOR, RECEPTACLE 3P
209	s	1-509-184-51	CONNECTOR, RECEPTACLE 3P
⚠210	s	1-509-546-00	3P INLET
⚠211	s	1-570-117-11	SWITCH, SEESAW AC POWER
212	o	1-939-259-11	HARNESS (A)
213	o	1-939-260-11	HARNESS (B)
214	o	1-939-261-11	HARNESS (C)
215	o	1-939-262-11	HARNESS (D)
216	o	1-939-263-11	HARNESS (E)
217	o	1-939-264-11	HARNESS (F)
218	o	1-939-265-11	HARNESS (G)
219	o	2-125-002-01	SHEET, INSULATING
220	s	2-250-557-00	NUT, SPECIAL, M6
221	o	2-251-642-00	GUARD, POWER SWITCH
222	o	3-668-459-11	SCREW, CONNECTOR
223	o	3-669-571-00	SUPPORT, CHASSIS, SF
224	o	3-673-910-00	SCREW, CONNECTOR
225	s	3-679-627-00	LEG
226	s	3-703-044-26	LABEL, CAUTION
227	o	3-703-141-00	HOLDER, PCB
228	s	7-621-259-52	SCREW +P2.6X8
229	s	7-622-207-05	N 2.6, TYPE 2
230	s	7-623-421-07	LW 2.6, TYPE B
231	s	7-623-422-07	LW 3, TYPE B
232	s	7-623-507-01	LUG, 2.6
233	s	7-682-247-09	SCREW +K3x6
234	s	7-682-547-09	SCREW +B3x6
235	s	7-682-647-09	SCREW +PWH3x6
236	s	7-682-961-01	SCREW +PSW4x8
237	s	7-684-023-04	N 3, TYPE 2
238	s	7-688-002-02	W 2.6, SMALL
⚠239	s	1-532-078-00	FUSE, 1A 250V (For J. U/C)
⚠239	s	1-532-822-11	FUSE, 1A 250V (For EK)



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205
235
238
229
220
231
237
207
202
223
212
213
212
213
233
225
235
201

C -2. ELECTRICAL PARTS LIST

CON-3 BOARD
(This assembly includes the following parts.)

Ref. No.	SP	Parts No.	DiscriptionNo.
RY1	s	1-515-608-11	RELAY
RY2	s	1-515-608-11	RELAY
CN41	o	1-564-002-00	PIN, CONNECTOR 3P
CN42	o	1-564-002-00	PIN, CONNECTOR 3P
CN43	o	1-564-002-00	PIN, CONNECTOR 3P
CN44	o	1-564-011-11	PIN, CONNECTOR 12P
CN45	o	1-564-011-11	PIN, CONNECTOR 12P
CN46	s	1-566-442-21	PIN, D-SUB 25P
CN47	s	1-563-891-21	SOCKET, D-SUB 25P
SW1	s	1-570-849-11	SWITCH, SLIDE
A1	o	1-622-537-11	PC BOARD, CON-3
D1	s	8-719-911-19	DIODE 1SS119
D2	s	8-719-911-19	DIODE 1SS119

MT-36 BOARD
- o A-7850-513-A COMPLETE PCB, MT-36
(This assembly includes the following parts.)

Ref. No.	SP	Parts No.	Description
C1	s	1-161-896-11	CAP, CERAMIC 0.22 50V
C2	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C3	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C4	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C5	s	1-124-446-11	CAP, ELECT 47 20% 10V
C6	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C7	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C8	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C9	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C10	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C11	s	1-131-370-00	CAP, TANTAL 6.8 10% 10V
C12	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C13	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C14	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C15	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C16	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C17	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C18	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C19	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C20	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C21	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C22	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C23	s	1-162-179-11	CAP, CERAMIC 0.1 50V
RV1	s	1-230-841-11	RES, ADJ, METAL 2K
RB1	s	1-231-410-00	RESISTOR BLOCK 10K
RB2	s	1-231-407-00	RESISTOR BLOCK 2.2K
RB3	s	1-231-410-00	RESISTOR BLOCK 10K
RB4	s	1-231-407-00	RESISTOR BLOCK 2.2K
RB5	s	1-231-533-00	RESISTOR BLOCK 10Kx4
RB6	s	1-231-385-00	RESISTOR BLOCK 4.7K
R1	s	1-215-493-00	RES, CARBON 1M 5% 1/6W
R2	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R3	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R4	s	1-249-413-11	RES, CARBON 470 5% 1/6W
R5	s	1-249-413-11	RES, CARBON 470 5% 1/6W
R6	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R7	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R8	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R9	s	1-249-421-11	RES, CARBON 2.2K 5% 1/6W
R10	s	1-249-421-11	RES, CARBON 2.2K 5% 1/6W
R11	s	1-249-421-11	RES, CARBON 2.2K 5% 1/6W
R12	s	1-249-421-11	RES, CARBON 2.2K 5% 1/6W
R13	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R14	s	1-215-493-00	RES, CARBON 1M 5% 1/6W
R15	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R16	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R17	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R18	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
SW1	s	1-516-925-21	SWITCH, DIP
X1	s	1-527-854-12	OSCILLATOR, CRYSTAL
CNI6	o	1-526-662-21	SOCKET, IC (DP) 40P
CN21	o	1-560-760-00	PIN, HEADER 40P
CN22	o	1-564-011-11	PIN, CONNECTOR 12P
CN23	o	1-564-011-11	PIN, CONNECTOR 12P
D1	s	8-719-911-19	DIODE 1SS119
D2	s	8-719-911-19	DIODE 1SS119
D3	s	8-719-911-19	DIODE 1SS119
D4	s	8-719-911-19	DIODE 1SS119
D5	s	8-719-911-19	DIODE 1SS119
D6	s	8-719-911-19	DIODE 1SS119
D7	s	8-719-911-19	DIODE 1SS119
D8	s	8-719-911-19	DIODE 1SS119
Q1	s	8-729-900-46	TRANSISTOR DTC143TF
Q2	s	8-729-900-46	TRANSISTOR DTC143TF
Q3	s	8-729-900-46	TRANSISTOR DTC143TF
Q4	s	8-729-900-46	TRANSISTOR DTC143TF
Q5	s	8-729-900-46	TRANSISTOR DTC143TF
Q6	s	8-729-900-46	TRANSISTOR DTC143TF
Q7	s	8-729-900-46	TRANSISTOR DTC143TF
Q8	s	8-729-900-46	TRANSISTOR DTC143TF
Q9	s	8-729-900-46	TRANSISTOR DTC143TF
Q10	s	8-729-900-46	TRANSISTOR DTC143TF
Q11	s	8-729-900-46	TRANSISTOR DTC143TF
Q12	s	8-729-900-46	TRANSISTOR DTC143TF
Q13	s	8-729-900-46	TRANSISTOR DTC143TF
Q14	s	8-729-900-46	TRANSISTOR DTC143TF
Q15	s	8-729-900-46	TRANSISTOR DTC143TF
Q16	s	8-729-900-46	TRANSISTOR DTC143TF
Q17	s	8-729-900-46	TRANSISTOR DTC143TF
Q18	s	8-729-987-41	TRANSISTOR 2SA874
Q19	s	8-729-982-21	TRANSISTOR 2SB822
Q20	s	8-729-987-41	TRANSISTOR 2SA874
Q21	s	8-729-982-21	TRANSISTOR 2SB822
Q22	s	8-729-987-41	TRANSISTOR 2SA874
Q23	s	8-729-982-21	TRANSISTOR 2SB822
Q24	s	8-729-987-41	TRANSISTOR 2SA874
Q25	s	8-729-982-21	TRANSISTOR 2SB822

Ref. No.	SP	Parts No.	Description
IC1	s	8-759-202-12	IC TC74HC02P
IC2	s	8-759-202-11	IC TC74HC00P
IC3	s	8-759-239-47	IC TC74HC123AP
IC4	s	8-759-202-24	IC TC74HC86P
IC5	s	8-759-202-11	IC TC74HC00P
IC6	s	8-759-777-21	IC UPD8749HD-RMT01
IC7	s	8-759-906-24	IC SN74LS624N
IC8	s	8-759-908-35	IC TL7705CP
IC9	s	8-759-941-37	IC CXD1134Q
IC10	s	8-759-182-43	IC UPD8243C
IC11	s	8-759-203-17	IC TC74HC251P
IC12	s	8-759-203-17	IC TC74HC251P

IO-29 BOARD

- o A-7850-515-A COMPLETE PCB, IO-29
(This assembly includes the following parts.)

Ref. No.	SP	Parts No.	Description
C1	s	1-102-963-00	CAP, CERAMIC 33PF 5% 50V
C2	s	1-131-377-00	CAP, TANTAL 10 10% 10V
C3	s	1-102-963-00	CAP, CERAMIC 33PF 5% 50V
C4	s	1-131-377-00	CAP, TANTAL 10 10% 10V
C5	s	1-102-959-00	CAP, CERAMIC 22PF 5% 50V
C6	s	1-102-959-00	CAP, CERAMIC 22PF 5% 50V
C7	s	1-124-122-11	CAP, ELECT 100 20% 50V
C8	s	1-124-122-11	CAP, ELECT 100 20% 50V
C9	s	1-124-122-11	CAP, ELECT 100 20% 50V
C10	s	1-124-122-11	CAP, ELECT 100 20% 50V
C11	s	1-131-377-00	CAP, TANTAL 10 10% 10V
C12	s	1-130-473-00	CAP, DISC 0.0015 5% 50V
C13	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C14	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C15	s	1-102-947-00	CAP, CERAMIC 10PF 5% 50V
C16	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C17	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C18	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C19	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C20	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C21	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C22	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C23	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C25	s	1-109-545-00	CAP, MICA 270PF 5% 100V
C26	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C27	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C28	s	1-107-165-00	CAP, SILVERD 56PF 5% 50V
C29	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C30	s	1-136-165-00	CAP, METAL 0.1 5% 50V
C31	s	1-102-973-00	CAP, CERAMIC 100PF 5% 50V
C33	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C34	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C35	s	1-102-824-00	CAP, CERAMIC 470PF 5% 50V
C36	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C37	s	1-131-363-00	CAP, TANTAL 4.7 10% 16V
C38	s	1-124-478-11	CAP, ELECT 100 20% 25V
C39	s	1-124-478-11	CAP, ELECT 100 20% 25V
C40	s	1-124-478-11	CAP, ELECT 100 20% 25V
C41	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C42	s	1-136-165-00	CAP, METAL 0.1 5% 50V
C43	s	1-124-442-00	CAP, ELECT 330 20% 6.3V
C44	s	1-136-165-00	CAP, METAL 0.1 5% 50V
C45	s	1-130-477-00	CAP, DISC 0.0033 5% 50V
C46	s	1-130-479-00	CAP, DISC 0.0047 5% 50V
C47	s	1-124-442-00	CAP, ELECT 330 20% 6.3V
C48	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C49	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C50	s	1-136-165-00	CAP, METAL 0.1 5% 50V
C51	s	1-130-471-00	CAP, DISC 0.001 5% 50V
C52	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C53	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C54	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C55	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C56	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C57	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C58	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C59	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C60	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C61	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C62	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C63	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C64	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C65	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C66	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C67	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C68	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C69	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
C70	s	1-131-368-00	CAP, TANTALUM 3.3 20% 16V
R1	s	1-249-393-11	RES, CARBON 10 5% 1/6W
R2	s	1-249-393-11	RES, CARBON 10 5% 1/6W
R3	s	1-249-405-11	RES, CARBON 100 5% 1/6W
R4	s	1-215-398-00	RES, CARBON 110 5% 1/6W
R5	s	1-249-405-11	RES, CARBON 100 5% 1/6W
R6	s	1-249-434-11	RES, CARBON 27K 5% 1/6W
R7	s	1-249-434-11	RES, CARBON 27K 5% 1/6W
R8	s	1-215-456-00	RES, CARBON 30K 5% 1/6W
R9	s	1-215-456-00	RES, CARBON 30K 5% 1/6W
R10	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R11	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R12	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R13	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R14	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R15	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R16	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R17	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R18	s	1-215-456-00	RES, CARBON 30K 5% 1/6W
R19	s	1-249-423-11	RES, CARBON 3.3K 5% 1/6W
R20	s	1-249-411-11	RES, CARBON 330 5% 1/6W
R21	s	1-249-411-11	RES, CARBON 330 5% 1/6W
R22	s	1-249-411-11	RES, CARBON 330 5% 1/6W
R23	s	1-249-411-11	RES, CARBON 330 5% 1/6W
R24	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R25	s	1-249-417-11	RES, CARBON 1K 5% 1/6W

Ref. No.	SP	Parts No.	Description
R26	s	1-249-409-11	RES, CARBON 220 5% 1/6W
R27	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R28	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R29	s	1-249-409-11	RES, CARBON 220 5% 1/6W
R30	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R31	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R32	s	1-249-409-11	RES, CARBON 220 5% 1/6W
R33	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R34	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R35	s	1-249-409-11	RES, CARBON 220 5% 1/6W
R36	s	1-249-417-11	RES, CARBON 1K 5% 1/6W
R37	s	1-249-409-11	RES, CARBON 220 5% 1/6W
R38	s	1-249-438-11	RES, CARBON 56K 5% 1/6W
R39	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R40	s	1-249-409-11	RES, CARBON 220 5% 1/6W
R41	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R42	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R43	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R44	s	1-249-429-11	RES, CARBON 10K 5% 1/6W
R45	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R46	s	1-215-450-00	RES, METAL 16K 1% 1/6W
R47	s	1-215-428-00	RES, METAL 2K 1% 1/6W
R48	s	1-249-411-11	RES, CARBON 330 5% 1/6W
R49	s	1-249-405-11	RES, CARBON 100 5% 1/6W
R50	s	1-249-405-11	RES, CARBON 100 5% 1/6W
R51	s	1-249-416-11	RES, CARBON 820 5% 1/6W
R52	s	1-247-838-00	RES, CARBON 2K 5% 1/6W
R53	s	1-249-411-11	RES, CARBON 330 5% 1/6W
L1	s	1-426-259-11	COIL, RF
A1	o	1-561-724-11	SOKET, CONNECTOR
A2	o	1-561-724-11	SOKET, CONNECTOR
A3	o	1-561-724-11	SOKET, CONNECTOR
A4	o	1-561-724-11	SOKET, CONNECTOR
CN31	o	1-564-242-00	PIN, CONNECTOR 5P
CN32	o	1-564-011-11	PIN, CONNECTOR 12P
CN33	o	1-564-011-11	PIN, CONNECTOR 12P
CN34	o	1-564-011-11	PIN, CONNECTOR 12P
CN35	o	1-564-011-11	PIN, CONNECTOR 12P
JW1	o	1-564-431-11	POST, CONNECTOR 3P
JW2	o	1-564-431-11	POST, CONNECTOR 3P
JW3	o	1-564-431-11	POST, CONNECTOR 3P
JW4	o	1-564-431-11	POST, CONNECTOR 3P
D1	s	8-719-911-19	DIODE 1SS119
D2	s	8-719-911-19	DIODE 1SS119
D3	s	8-719-911-19	DIODE 1SS119
D4	s	8-719-911-19	DIODE 1SS119
D5	s	8-719-911-19	DIODE 1SS119
D6	s	8-719-911-19	DIODE 1SS119
D7	s	8-719-911-19	DIODE 1SS119
D8	s	8-719-911-19	DIODE 1SS119
D9	s	8-719-911-19	DIODE 1SS119
D10	s	8-719-911-19	DIODE 1SS119
D11	s	8-759-939-38	IC DAP801
D13	s	8-719-911-19	DIODE 1SS119
D14	s	8-719-911-19	DIODE 1SS119
D15	s	8-759-939-39	IC DAN801
D16	s	8-759-939-38	IC DAP801
D17	s	8-719-911-19	DIODE 1SS119
D18	s	8-719-911-19	DIODE 1SS119
D19	s	8-719-911-19	DIODE 1SS119
D20	s	8-719-902-79	DIODE KV1236Z
D21	s	8-719-901-75	DIODE 1SS88
D22	s	8-719-901-75	DIODE 1SS88
D23	s	8-719-911-19	DIODE 1SS119
Q1	s	8-759-400-30	IC AN78L05
Q2	s	8-729-124-08	TRANSISTOR 2SC2408
Q3	s	8-729-124-08	TRANSISTOR 2SC2408
IC1	s	8-759-942-32	IC SN75178BP
IC2	s	8-759-239-47	IC TC74HC123AP
IC3	s	8-759-239-47	IC TC74HC123AP
IC4	s	8-759-000-99	IC MC74HC74N
IC5	s	8-759-000-99	IC MC74HC74N
IC6	s	8-759-926-32	IC AM26LS32PC
IC7	s	8-759-202-24	IC TC74HC86P
IC8	s	8-759-202-13	IC TC74HCU04P
IC9	s	8-759-202-11	IC TC74HC00P
IC10	s	8-759-202-30	IC TC74HC161P
IC11	s	8-759-202-24	IC TC74HC86P
IC12	s	8-759-915-26	IC CX23053
IC13	s	8-759-202-30	IC TC74HC161P
IC14	s	8-759-016-48	IC MC1648P
IC15	s	8-759-918-71	IC CX23065
IC16	s	8-759-905-29	IC NE529N
RD1	s	8-749-901-37	IC ZHMA2402

Ref. No.	SP	Parts No.	Description
DSP-15 BOARD			
R1	s	1-247-706-11	RES, CARBON 330 5% 1/4W
R2	s	1-247-706-11	RES, CARBON 330 5% 1/4W
R3 to 6	s	1-247-725-11	RES, CARBON 10K 5% 1/4W
R7 to 10	s	1-247-706-11	RES, CARBON 330 5% 1/4W
R11 to 26	s	1-247-094-00	RES, CARBON 30 5% 1/4W
R27	s	1-247-704-11	RES, CARBON 220 5% 1/4W
R28	s	1-247-704-11	RES, CARBON 220 5% 1/4W
R29 to 32	s	1-247-703-11	RES, CARBON 180 5% 1/4W
R33 to 36	s	1-247-704-11	RES, CARBON 220 5% 1/4W
R37	s	1-247-703-11	RES, CARBON 180 5% 1/4W
R38	s	1-247-725-11	RES, CARBON 10K 5% 1/4W
CN11	o	1-559-408-11	CABLE ASSY, DSP FLAT
SW1	o	1-571-157-11	SWITCH, TLGGLE
SW2	o	1-571-156-11	SWITCH, TLGGLE
SW3	o	1-553-476-21	SWITCH, ROTARY
D1 to 4	s	8-719-942-11	DIODE PG5785X
D5	s	8-719-945-67	DIODE BR5785X
D6 to 8	s	8-719-945-69	DIODE AA5785X
D9	s	8-719-945-68	DIODE PY5785X
D10 to 15	s	8-719-945-73	DIODE PY5551K-M-92
D16	s	8-719-945-71	DIODE BR5551K
D17	s	8-719-928-52	DIODE AY5551K-M
D18 to 26	s	8-719-945-73	DIODE PY5551K-M-92
D27 to 48	s	8-719-945-72	DIODE BG5551K-92
D49	s	8-719-945-71	DIODE BR5551K
D50	s	8-719-928-52	DIODE AY5551K-M
D51 to 59	s	8-719-945-73	DIODE PY5551K-M-92
D60 to 81	s	8-719-945-72	DIODE BG5551K-92
Q1 to 10	s	8-729-900-46	TRANSISTOR DTC143TF
IC2	s	8-759-202-20	IC TC74HC27P
IC1	s	8-759-202-26	IC TC 74HC138P
FRAME			
-	s	1-102-963-00	CAP, CERAMIC 33PF 5% 50V
⚠-	s	1-235-273-00	FILTER, AC LINE NOISE
⚠-	s	1-413-308-11	REGULATOR, SWITCHING
-	o	1-464-835-11	PANEL UNIT, INDICATION
-	s	1-507-743-00	JACK, STEREO MINIATURE
-	s	1-509-176-51	CONNECTOR, RECEPTACLE 3P
-	s	1-509-184-51	CONNECTOR, RECEPTACLE 3P
⚠-	s	1-509-546-00	3P INLET
⚠F1	s	1-532-078-00	FUSE 1A 250V (For EK)
⚠F2	s	1-532-822-11	FUSE 1A 250V (For J, U/C)
⚠-	s	1-570-117-11	SWITCH, SEESAW AC POWER
-	o	1-933-158-11	HARNESS (C)
-	o	1-939-259-11	HARNESS (A)
-	o	1-939-260-11	HARNESS (B)
-	o	1-939-261-11	HARNESS (C)
-	o	1-939-262-11	HARNESS (D)
-	o	1-939-263-11	HARNESS (E)
-	o	1-939-264-11	HARNESS (F)
-	o	1-939-265-11	HARNESS (G)

C-3. ACCESSORIS SUPPLIED

Qty	SP	Part No.	Description
⚠1	s	1-534-754-00	CORD, POWER (For J.)
⚠1	s	1-551-812-00	CORD, POWER (For U/C)
⚠1	s	1-556-760-11	CORD, POWER (3 CORE) (For EK)
1	s	1-557-756-11	CORD, MIC (2 CORE)
1	s	1-559-343-11	CABLE ASSY, STATUS

(This assembly includes the following parts.)

1	o	1-506-510-11	CONNECTOR,D SUB(SOCKET) 25P
1	o	1-564-747-11	CONNECTOR,D SUB(PLUG) 25P

DMU-30
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